PFE ORIGINAL

U.S. Department of Homeland Security
United States Coast Guard

Commanding Officer
United States Coast Guard YARD

2401 Hawkins Point Road
Baltimore, MD 21226
Phone: 410-636-4097
Fax: 410-636-7692

5090
September 28, 2012

PFE ORIGINAL
CERTIFIED MAIL

Ms. Joan Martin Banks (3HS62)
U.S. Environmental Protection Agency, Region III
1650 Arch Street
Philadelphia, PA 19103-2029

Dear Ms Banks:

This letter is in response to the April 23, 2012 letter from Ms. Joanne Marinelli, Chief, Cost Recovery Branch, U.S. Environmental Protection Agency, Region III (EPA), to CDR John P. Slaughter, formerly of U.S. Coast Guard Yard, 2401 Hawkins Point Road, Baltimore, Maryland. Enclosed please find a disc containing the United States Coast Guard response. If you have any questions, please contact our counsel, Ms. Ruth Ann Weidel, at 202-372-3749 or email Ruthann.n.Weidel@uscg.mil.

Sincerely,

John F. Barresi
Commander, U. S. Coast Guard
Chief, Facilities Management Department, USCG YARD
By direction of the Commanding Officer

Enclosure

RESPONSE TO EPA QUESTIONS

1. What is the current nature of your activity?

RESPONSE: The Coast Guard Yard is an active ship yard repair facility. In addition to the shipyard, the Yard houses various other Coast Guard (CG) components *e.g.*, CG Cutters and the Surface Forces Logistics Center (SFLC), which stores boat, helicopter and plane replacement parts.

What was the nature of your activity during the period 1960 to 1990? Please describe in detail if the nature of your activity changed from the period 1960 to 1990.

RESPONSE: See above response. Moreover, CG vessels were built, as well as repaired, at the CG Yard until the mid-1980s.

Please provide a detailed explanation of the changes to date.

RESPONSE: The CG Yard functions in essentially the same way currently as it did previously with the exception of the building of vessels. As EPA knows, the Yard is a Superfund site and the CG has remediated, or is currently in the process of remediating, areas of contamination under the aegis of the Maryland Department of the Environment and EPA.

2. EPA has obtained information during the course of its investigation indicating that you may have produced waste at Curtis Bay which was disposed of at the Site, and/or disposed of waste at the Site referenced in this letter. Please provide the following information regarding all wastes and by-products produced by you during the period 1960 to 1990:

a. The nature of each "waste" (as the term "waste" is defined in paragraph 6 of the definitions attached hereto) used including its chemical content, characteristics and physical state (*i.e.*, liquid, solid, gas, or in the form of contaminated rags, cups, containers). Provide chemical analyses and Material Safety Data Sheets ("MSDS").

RESPONSE: The CG has been unable to locate at this point any records relating to such disposal or current CG Yard employees who are aware that any waste from the CG Yard was disposed at the Sauer Dump. See attached documentation, including but not limited to Maryland Annual Hazardous Waste Reports for various years from 1984 to 1990. MSDS sheets for various chemicals that may have resulted in various types of waste streams delineated in these Hazardous Waste Reports are attached.

If these analyses are not available for the period 1960 through 1990, submit analyses for the time period closest to these dates and describe, in detail, any changes in the process (es) in which these wastes were produced that would affect the chemical analyses;

RESPONSE: See response to question 2.a. above.

b. The annual quantity of each "waste" used or generated;
RESPONSE: See attached documentation.

c. The process (es) in which each "waste" was used or the process (es) that generated each;

RESPONSE: See attached documentation. For various wastes in the above Hazardous Waste Reports, the following wastes were generated, and to the best of our current knowledge, this was a result of the below delineated processes:

Alanite – Cleaning of aluminum

Cadmium Chloride – Unknown.

Sodium Hydroxide – Metal cleaning.

Sodium Meta Silicate – Aluminum cleaning.

Sodium Carbonate – Aluminum cleaning.

Diversy – Aluminum cleaning.

Oakite – Metal cleaning.

Pensolve – Unknown.

PCB – Use in Transformers, chromelock for vibration dampening, in some paints.

Mercury – Unknown.

Calcium Hypochlorite – Unknown.

Sulfuric acid – Metal cleaning.

Acetone – Metal cleaning.

Ethylene Glycol – Use of antifreeze in motors/equipment.

Styrene monomer – inhibited – Fiberglassing of boats and boat shafts.

Stoddard solvent (Tetrachloroethane) – Degreasing.

Waste paint/thinners/resins/lead/solvents – Painting operations.

Waste solvent caulk – Sealing seams or holes in boats.

Waste barium oxide – Contained in emergency breathing escape devices.

Zinc Chromate – Prime coat prior to painting.

Polyurathane – Painting

d. The types of containers used to treat, store or dispose of each "waste";

RESPONSE: Waste was most commonly disposed in 55 gallon drums.

and
e. The method of treatment and/or disposal of each "waste."

RESPONSE: Records and investigative studies, previously submitted to EPA as part of the aforementioned delineation of the CG Yard as a SUPERFUND Site, reflect the disposal of wastes referenced therein at the Yard. Due to the voluminous nature of these records, the CG is not reproducing them as part of this Request.

3. Provide the names, titles, areas of responsibility, addresses and telephone numbers of all personnel during the period of 1960 to 1990 who may have:

a. Disposed of or treated "waste" at the Site;

RESPONSE: See below and attached documentation to extent it may be relevant. The CG has been unable to locate at this point any current CG Yard employees who are aware that any waste from the CG Yard was disposed at the Sauer Dump. Employees who may have pertinent information as to this issue include the following:

Current employees:

Dale Brice, former Yard trash truck driver, now forklift operator, Yard Industrial Department, [redacted].

Former employees:

Walter C. Dorsch Jr.
Facilities Management
[redacted]

Everett C. Warble Jr.
Safety and Occupational Health Manager
[redacted]

Stanley P. Patro Jr.
Shop Planner
[redacted]

[redacted]
Joseph E. Botts
Safety and Occup. Health Manager
[redacted]

William Brown, Truck Driver,
[redacted]

Ursula Yeo
Hazardous waste Coordinator
[redacted]

Frank Garriques
[redacted]

Richard Doherty
[redacted]

b. Arranged for the disposal or treatment of "waste" at the Site;

RESPONSE: Please refer to response to question 3.a. above.

and
c. Arranged for the transportation of "waste" to the Site (either directly or through transshipment points) for disposal or treatment.

RESPONSE: Please refer to response to question 3.a. above.

4. Describe the methods used by you to dispose and/or treat "waste" during the period 1960 to 1990.

RESPONSE: The CG Yard had an active incinerator on site to burn waste during the period beginning in the 1930s/1940s. It is believed that waste stopped being incinerated sometime during the 1970s based on available information to date. The former incinerator may have continued to be used as a trash transfer station for a period of time after through the 1980s. The former incinerator was torn down in 1996.

The Yard also maintained an area as a “burn pit” to incinerate wastes. Records previously submitted to EPA indicate that waste was dumped in the pit, accelerants were added and the wastes were incinerated.

It also appears that from the 1940s through 2007, the Yard maintained a salvage yard where metals were collected and sorted for recycling and disposal.

The Yard also disposed of some wastes off-site which included the contracting of a hauler or transporter to transport and/or dispose of wastes. See attached documentation.

5. If your response to Question 4 includes the contracting of a hauler or transporter to transport and/or dispose of wastes, explain the arrangements for those transactions and provide documentation that confirms the nature of those transactions.

RESPONSE: See attached documentation.

6. Did your activity make arrangements with any of the following companies: Robb Tyler, Inc., Browning-Ferris, Lawrence Jendras, Herb Robertson, Modem Trash, Modem, Inc., North Point Trash Removal, Warren Parker Hauling, Refuse Disposal Inc., F.P.R. Bohager Company, Donald Siejack, Henry Siejack, Debris Disposal, Cross Efficient Trash Removal Service, Inc., Jerome Cross, F.A. Sauer & Son, and Modem Trashmoval, Inc. to transport and/or dispose of wastes?

RESPONSE: Unknown at this point because unable to locate any records.
If so, identify:

a. The persons with whom you, or such other persons, made such arrangements;

RESPONSE: Unknown at this point because unable to locate any records.

b. Every date on which such arrangements took place;

RESPONSE: Unknown at this point because unable to locate any records.

c. For each transaction, the nature and quantity of the "waste" including the chemical content, characteristics, physical state (*i.e.*, liquid, solid), and the process for which the substance was used or the process that generated the substance;

RESPONSE: Unknown at this point unable to locate any records.

d. Precise locations at which each "waste" was disposed or treated;

RESPONSE: See prior responses.

e. The persons who selected the Site as the place at which "waste" was disposed or treated;
RESPONSE: Unknown at this point because unable to locate any records..

f. The final disposition of each of the "wastes" involved in such transactions; and

RESPONSE: Unknown at this point because unable to locate any records.

g. The names of employees, officers, owners and agents for each transporter.

RESPONSE: Unknown at this point because unable to locate any records.

7. For each and every instance in which your activity arranged for disposal or treatment of "waste" at the Site identify:

a. The characteristics, physical state (i.e., liquid, solid) and chemical composition of each "waste";

RESPONSE: Unknown at this point because unable to locate any records.

b. The persons who supplied you with "waste" material disposed or otherwise handled by you;

RESPONSE: Unknown at this point because unable to locate any records.

c. How such "wastes" were used, treated, transported, disposed or otherwise handled by you;

RESPONSE: Unknown at this point because unable to locate any records.

d. When and where such "wastes" were used, treated, transported, disposed or otherwise handled by you;

RESPONSE: Unknown at this point because unable to locate any records.

e. The quantity (number of loads, gallons, drums) of the "wastes" which were used, treated, transported, disposed or otherwise handled by you;

RESPONSE: Unknown at this point because unable to locate any records.

and
f. Any billing information and documents (invoices, trip tickets, manifests) in your possession regarding arrangements made with your activity to generate, treat, store, transport or dispose of "wastes" at the Site.

RESPONSE: Unknown at this point because unable to locate any records.

8. Provide the names, titles and areas of responsibility of any persons, including all present and former employees, who may be knowledgeable of your waste disposal practices, whether or not involving disposal at the Site, during the period 1960 to 1990. Include current addresses and dates of birth for former employees.

RESPONSE:

Current employees:
Dale Brice
Former Yard trash truck driver, now forklift operator, Yard Industrial Department, [redacted]

Former Employees:

Walter C. Dorsch Jr.
Facilities Management
[redacted]

William Brown,
Truck Driver
[redacted]
Retired: November 2011

Everett C. Warble Jr.
Safety and Occupational Health Manager
[redacted]

Stanley P. Patro Jr.
Shop Planner
[redacted]

Joseph E. Botts
Safety and Occup. Health Manager
[redacted]

Ursula Yeo
Hazardous waste Coordinator
[redacted]
Richard W. Doherty
[redacted]

Frank Garriques
[redacted]

9. Describe any permits or applications and any correspondence between you and any regulatory agencies regarding "wastes" transported to or disposed of at the Site.

RESPONSE: See attached documentation to extent it may be relevant.

10. Provide copies of any correspondence between you and any third party regarding "wastes" transported to or disposed of at the Site.

RESPONSE: See attached to extent they may be relevant.

11. Provide the identity of, and copies of any documents relating to, any other person who generated, treated, stored, transported or disposed, or who arranged for the treatment, storage, disposal or transportation of such "wastes" to the Site.

RESPONSE: See attached documents to the extent they may be relevant.

12. Provide the name, title, address, and telephone number of the person answering these questions on behalf of the respondent.

RESPONSE: Robert A. DeMarco, Yard Environmental Engineer, MS #10, 2401 Hawkins Point Road, Baltimore, MD 21226 (410) 636-7070.

13. For each question, provide the name, title, area of responsibility, current address and telephone number of all persons consulted in the preparation of the answers.

RESPONSE: Ms. Bethany Hill, Environmental Protection Specialist, MS #10, 2401 Hawkins Point Road, Baltimore, MD 21226 (410) 636-7026;

Mr. John Moore, Environmental Protection Specialist, MS #10, 2401 Hawkins Point Road, Baltimore, MD 21226 (410) 636-3775;

CDR John F.Barresi, Facility Management Department, MS #10, 2401 Hawkins Point Road, Baltimore, MD 21226 (410) 636-4097

Walter Misiorek, Chief, Retirement and Benefits Service Center U.S. Coast Guard Office of Civilian Human Resources, CG-1213 2100 2nd St., SW CG-1213, Room 8-0824 Washington, DC 20593-7801, Office: 202-475-5325

Mr. Jerry Davis, NE Branch Chief
Civilian Human Resources
US Coast Guard Yard
MS #4
2401 Hawkins Point Road
Baltimore, MD 21226 (410) 636-7094

DHS/OPM personnel. See attached emails.

14. If you have reason to believe that there may be persons able to provide more detailed or complete responses to any question contained herein or who may be able to provide additional responsive documents, provide the names, titles, areas of responsibility, current addresses, and telephone numbers of such persons and describe the additional information or documents they may have.

RESPONSE: See above responses.

15. For each and every question contained herein, if information or documents responsive to this Information Request are not in your possession, custody or control, then provide the names, titles, areas of responsibility, current addresses and telephone numbers of the persons from whom such information or documents may be obtained.

RESPONSE: See above responses.

16. If you have any information about other parties who may have information which may assist the Agency in its investigation of the Site or who may be responsible for the generation of, transportation to or release of contamination at the Site, please provide such information. The information you provide in response to this request should include each party's name, address, type of business and the reasons why you believe the party may have contributed to the contamination at the Site or may have information regarding the Site.

Do not make ... areas

MARYLAND OFFICE OF ENVIRONMENTAL PROGRAMS

GENERATOR ANNUAL HAZARDOUS WASTE REPORT

This report is for the calendar year ending December 31, **1984**

PEEL HERE

GENERAL INSTRUCTIONS: If you received a preprinted label attached to the mailing envelope in which this form was enclosed, affix it in the space provided. If any of the information on the label is incorrect, draw a line through it and provide the correct information in the appropriate section below. If the information is correct and complete, leave Sections I, II, and III below blank. If you did not receive a preprinted label, complete all sections. REFER TO THE SPECIFIC INSTRUCTIONS CONTAINED IN THIS BOOKLET BEFORE COMPLETING THIS FORM. The information requested in this report is required by law (Section 3002 of the Resource Conservation Recovery Act).

Please print/type with elite type (12 characters per inch)

I. GENERATOR'S EPA I.D. NUMBER

T/A C.

F | | 1

II. NAME OF INSTALLATION

III. INSTALLATION MAILING ADDRESS

3

Street or P.O. Box

4

City or Town — State — Zip Code

IV. LOCATION OF INSTALLATION (if different than section III above)

5

Street or Route number

6

City or Town — State — Zip Code

V. INSTALLATION CONTACT

2 Yeo Ursula

Name (last and first)

301 789 1600

Phone No. (area code & no.)

VI. CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Print/Type Name	Title	Signature of Authorized Representative	Date Signed
R.A. Walsh, CAPT USCG	Designated Safety & Health Official	[signature]	28 FEB '85

EPA Form 8700-13A (5-80) (Revised 10-82)

Do not make entries [illegible]

MARYLAND OFFICE OF ENVIRONMENTAL PROGRAMS
Generator Annual Hazardous Waste Report (cont.)

This report is for the calendar year ending December 31, 1984

Date rec'd: ____________	Rec'd by: ____________

VII. GENERATOR'S EPA I.D. NO.

G MD [illegible]

VIII. FACILITY NAME (specify facility to which all wastes on this page were shipped)

Chem Clear of Baltimore, Inc.

IX. FACILITY'S EPA I.D. NO.

F MDD 9 8 0 5 5 5 1 8 9

X. FACILITY ADDRESS

1910 Russell St.
Baltimore, MD 21230

XI. TRANSPORTATION SERVICES USED (List the name and EPA identification numbers of all transporters whose services were used during 1984. This section to be completed only once. Do not repeat on supplemental sheets.)

A & A Waste Oil Co. EPA MDD030330690
American Tank Transport EPA MDD069372746

XII. WASTE IDENTIFICATION

Sequence #	Line #	A. Description of Waste	B. DOT Hazard code	C. EPA Hazardous Waste No. (see instructions)	D. Amount of Waste	E. Unit of Measure
	1	Waste Corrosive Liquid NOS (Alanite, Alkaline Boiler	02	D002	47 200	P
	2	Water)				
	3	Cadmium Chloride (Waste electroplating soln.)	15	[illegible]	2 20 0	P
	4					
	5	Waste Sodium Hydroxide(30%) Sodium Meta Silicate (40%)				
	6	Sodium Carbonate (15%)Soln.	02	D0 02	71 2 0	P
	7					
	8					
	9					
	10					
	11					
	12					

XIII. COMMENTS (enter information by section number—see instructions)

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Do not make entries [illegible]

MARYLAND OFFICE OF ENVIRONMENTAL PROGRAMS

Generator Annual Hazardous Waste Report (cont.)

This report is for the calendar year ending December 31, 1984

Date rec'd: ________ Rec'd by: ________

VII. GENERATOR'S EPA I.D. NO.

G M D 0 6 5 0 3 0 7 C 4 | 1

IX. FACILITY'S EPA I.D. NO.

F PAD 0 1 0 1 5 4 0 4 5

VIII. FACILITY NAME (specify facility to which all wastes on this page were shipped)

Envirite Corp.

X. FACILITY ADDRESS

1600 Pennsylvania Ave
York, Pa. 17404

XI. TRANSPORTATION SERVICES USED (list the name and EPA identification numbers of all transporters whose services were used during 1984. This section to be completed only once. Do not repeat on supplemental sheets.)

Envirite Corp. EPA PAD010154045

XII. WASTE IDENTIFICATION

Sequence #	Line	A. Description of Waste	B. DOT Hazard code	C. EPA Hazardous Waste No. (see instructions)	D. Amount of Waste	E. Unit of Measure
	1	Waste Alkaline Liquid NOS (Diversy 909, degreaser)	02	D002	31184	P
	2	Waste Acid Liquid NOS (Diversy 500B deoxidizer)	02	D002	10560	P
	3					
	4					
	5					
	6					
	7					
	8					
	9					
	10					
	11					
	12					

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XIII. COMMENTS (enter information by section number—see instructions)

In addition to manifests attached, manifests held by Stan Petro in X-11 and Mick Patagno in X-21 are in this report. I physically checked safety files for other manifests Seems like there should have been more - just a gut feeling. Also attached is memo requesting manifests from ships. Report mailed 1:30 pm 2/25/85 - went directly into outbound mail bag.

U. Uyeo
2/25/85

Memorandum

U.S. Department of Transportation
United States Coast Guard

Subject HAZARDOUS WASTE MANIFESTS

Date 4 Feb 1985
5100

Reply to io-120
Attn of Yeo: X324

From Manager, Industrial Operations

To Distribution

1. The State of Maryland requires a report of hazardous waste generation for each calendar year. This report is now due. Please forward all copies of hazardous waste manifests for calendar year 1984 to Industrial Engineering by February 15, 1985 for inclusion in the report. The manifests will be returned to originators when the report is completed.

2. For future hazardous waste disposal, please note that the pink and green manifest is no longer valid. The new form is EPA Form 8700-22 (7-84) titled Hazardous Waste Manifest. These are available from the Hazardous Waste Coordinator, temporarily Ursula Yeo in Industrial Engineering. Assistance will be provided to properly complete the form.

J. M. PAYNE
Acting

Dist: CHIND
CHFACMGT
CHSUPDIV
CHHEALTH SVCS DEPT
X10SUPT
X20SUPT
X30SUPT
SAFETY

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MARYLAND OFFICE OF ENVIRONMENTAL PROGRAMS

GENERATOR ANNUAL HAZARDOUS WASTE REPORT

This report is for the calendar year ending December 31, 1985

MD4690307844
US COAST GUARD YARD
HAWKINS POINT RD
BALTIMORE MD 21226
ATTN: ~~L K TUCKER~~ J. E. BOTTS

Please print/type with elite type (12 characters per inch)

GENERAL INSTRUCTIONS: If you received a preprinted label attached to the mailing envelope in which this form [illegible], affix it in the space provided. If any of the [illegible] on the label is incorrect, draw a line through it [illegible] the correct information in the appropriate sec[illegible]. If the information is correct and complete, leave [illegible] below blank. If you did not receive a [illegible] label, complete all sections. REFER TO THE SPE[illegible] INSTRUCTIONS CONTAINED IN THIS BOOKLET [illegible] COMPLETING THIS FORM. The information [illegible] quested in this report is required by law (Section 3002 of the Resource Conservation Recovery Act).

I. GENERATOR'S EPA I.D. NUMBER

F [illegible]

II. NAME OF INSTALLATION

III. INSTALLATION MAILING ADDRESS

3

Street or P.O. Box

4

City or Town — State — Zip Code

IV. LOCATION OF INSTALLATION (if different than section III above)

5

Street or Route number

6

City or Town — State — Zip Code

V. INSTALLATION CONTACT

2 BOTTS JOSEPH F

Name (last and first)

301 789 1600 EXT 209

Phone No. (area code & no.)

VI. CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Print/Type Name	Title	Signature of Authorized Representative	Date Signed
J. M. Payne, CAPT USCG	Designated Safety & Health Official	[signature]	1-16-86

EPA Form 8700-13A/B (Revised 10-85)

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Do not make entries in shaded areas

MARYLAND OFFICE OF ENVIRONMENTAL PROGRAMS

Generator Annual Hazardous Waste Report (cont.)

This report is for the calendar year ending December 31, 1985

Date rec'd: ______________ Rec'd by: ______________

VII. GENERATOR'S EPA I.D. NO.

G M D 4 6 9 0 3 0 7 8 4 4 1

VIII. FACILITY NAME (specify facility to which all wastes on this page were shipped)

Chem-Clear of Baltimore, Inc.

IX. FACILITY'S EPA I.D. NO.

F M D 0 9 8 0 6 5 5 1 8 9

X. FACILITY ADDRESS

1910 Russell Street
Baltimore Maryland 21230

XI. TRANSPORTATION SERVICES USED (List the name and EPA identification numbers of all transporters whose services were used during 1985. This section has to be completed only once. Do not repeat on supplemental sheets.)

Oil Services Co., Inc. - EPA ID # TND089558019
A&A Waste Oil Co. - EPA ID # MDD030330690
AMO Pollution Services - EPA ID # PAD038966230
J&L Industries INC, EPA ID # MDD022527584

XII. WASTE IDENTIFICATION

Sequence #	Line	A. Description of Waste	B. DOT Hazard Code	C. EPA Hazardous Waste No. (see instructions)	D. Amount of Waste	E. Unit of Measure
	1	Hazardous Waste Liquid NOS NA9189-Bilge Water w/chrome	1.5	D007	000068054	P
	2	Hazardous Waste, Corosive Liquid NOS UN1760 (Alenite)	0.2	D002	000066515	P
	3	Hazardous Waste Liquid NOS NA9189 (CCB770, Pensolve 814	0.2	D007	000029489	P
	4	Hazardous Waste Liquid NOS Corrosive UN1760 (Oakite)	0.2	D002	000014688	P
	5					
	6					
	7					
	8					
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	11					
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XIII. COMMENTS (enter information by section number—see instructions)

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MARYLAND OFFICE OF ENVIRONMENTAL PROGRAMS

Generator Annual Hazardous Waste Report (cont.)

This report is for the calendar year ending December 31, 1985

Date rec'd: ______________ Rec'd by: ______________

VII. GENERATOR'S EPA I.D. NO.

G M D 4 6 90 3 0 7 86 4 1

VIII. FACILITY NAME [illegible]

P.C.B. Incorporated of Missouri

IX. FACILITY'S EPA I.D. NO.

F M 0 0 98 0 6 3 3 06 4

X. FACILITY ADDRESS

2100 Wyandotte Avenue
Kansas City Missouri 64108

XI. TRANSPORTATION SERVICES USED [illegible]

D&J Transportation Inc. - EPA ID # NYD088658646
Hazmat Environmental Group - EPA ID # NYD980769947

XII. WASTE IDENTIFICATION

Sequence #	Line #	A. Description of Waste	B. DOT Hazard Code	C. EPA Hazardous Waste No. (see instructions)	D. Amount of Waste	E. Unit of Measure
	1	RQ Waste PCB ORM-E UN2315	15	B009	0 00 0 4 70 7 6	P
	2					
	3					
	4					
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	10					
	11					
	12					

XIII. COMMENTS (enter information by section number—see instructions)

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MARYLAND OFFICE OF ENVIRONMENTAL PROGRAMS

Generator Annual Hazardous Waste Report (cont.)

This report is for the calendar year ending December 31, 1985

Date rec'd: ______ Rec'd by: ______

VII. GENERATOR'S EPA I.D. NO.

G M D 4 6 9 0 3 0 7 8 4 4 1 1

VIII. FACILITY NAME [illegible]

Alchem-Tron

IX. FACILITY'S EPA I.D. NO.

F D H D 9 8 0 5 6 9 4 3 8

X. FACILITY ADDRESS

7415 Bessemer Avenue
Cleveland, Ohio 44127

XI. TRANSPORTATION SERVICES USED [illegible]

XII. WASTE IDENTIFICATION

Sequence #	Line	A. Description of Waste	B. DOT Hazard Code	C. EPA Hazardous Waste No. (see instructions)	D. Amount of Waste	E. Unit of Measure
	1	Waste, Flammable Liquid NOS UN1993	0 8	D 0 0 1	0 0 0 0 0 8 8 1 5	P
	2	Hazardous Waste Solid NOS NA9189	0 2	D 0 0 7	0 0 0 0 2 6 2 7 0	P
	3					
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XIII. COMMENTS (enter information by section number—see instructions)

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MARYLAND OFFICE OF ENVIRONMENTAL PROGRAMS

Generator Annual Hazardous Waste Report (cont.)

This report is for the calendar year ending December 31, 1985

Date rec'd: ______ Rec'd by: ______

VII. GENERATOR'S EPA I.D. NO.

GM D K 6 9 0 3 0 2 8 4 4 1 1

VIII. FACILITY NAME (specify facility to which all wastes on this page were shipped)

Malone Services Co., Inc.

IX. FACILITY'S EPA I.D. NO.

F T X D 0 2 7 1 4 7 1 1 5

X. FACILITY ADDRESS

197 South Street
Texas City, Texas 77592

XI. TRANSPORTATION SERVICES USED (List the name and EPA I.D. numbers of all transporters whose services were used during 1985. This section is to be completed only once. Do not repeat on supplemental sheets.)

XII. WASTE IDENTIFICATION

Sequence #	Line	A. Description of Waste	B. DOT Hazard Code	C. EPA Hazardous Waste No. (see instructions)	D. Amount of Waste	E. Unit of Measure
	1	Hazardous Waste Liquid NOS ORM-A NA9189 (Bilge Water w/oil and solvent)	O2	D 0 0 7	0 00 0 3 6 6 96	P
	2					
	3					
	4					
	5					
	6					
	7					
	8					
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	11					
	12					

XIII. COMMENTS (enter information by section number—see instructions)

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MARYLAND OFFICE OF ENVIRONMENTAL PROGRAMS

Generator Annual Hazardous Waste Report (cont.)

This report is for the calendar year ending December 31, 1985

Date rec'd: ____________ Rec'd by: ____________

VII. GENERATOR'S EPA I.D. NO.

G MD 46903078441 1

VIII. FACILITY NAME (specify facility to which all wastes on this page were shipped)

SCA Chemical Services

IX. FACILITY'S EPA I.D. NO.

F NYD049836679

X. FACILITY ADDRESS

1550 Balmer Road
Model City, New York 14107

XI. TRANSPORTATION SERVICES USED (List the name and EPA identification numbers of all transporters whose services were used during 1985. This section to be completed only once. Do not repeat on supplemental sheets.)

XII. WASTE IDENTIFICATION

Sequence #	Line	A. Description of Waste	B. DOT Hazard Code	C. EPA Hazardous Waste No. (see instructions)	D. Amount of Waste	E. Unit of Measure
	1	Hazardous Waste Liquid NOS NA9189 ORM-E	1, 4	D007	0000127 26	P
	2	Hazardous Waste Solid NOS Contaminated Empty Drums ORM-E	1, 5	D007	0000017431	P
	3					
	4					
	5					
	6					
	7					
	8					
	9					
	10					
	11					
	12					

XIII. COMMENTS (enter information by section number—see instructions)

Tear out here

OFFICE OF ENVIRONMENTAL PRC AMS
WASTE MANAGEMENT ADMINISTRATION

Hawkins Point Road

Street City Zip code

Location of Generator Site: N/A

(if different from mailing address)

Contact Person:

Joseph F. Botts — (301) 789-1600 Ext. 209

Name Telephone number

Signature

Safety & Occup. Health Manager

Title

Please provide information about your company's hazardous waste minimization program. (If more space is needed, please answer on a separate sheet of paper and attach it to the questionnaire)

1. Separation

Is your company's waste collection system designed to decrease the volume of hazardous waste by keeping hazardous waste separate from non-hazardous waste?

Yes ☒ No ☐

If yes, has the system been improved in the past year to further reduce the amount of hazardous waste?

Yes ☒ No ☐

What reduction in volume was achieved in the last year?

Approximately fifty (50) percent of the waste disposed of in 1984 has been found to be in fact non-hazardous. Much of this waste in the past was waste oil.

2. Substitution

Has your company substituted a hazardous material with a non-hazardous or less hazardous material to reduce either the amount or toxicity of hazardous waste generated by your operation?

Yes ☐ No ☒

If yes, when was the substitute introduced, and to what extent has it reduced the toxicity or amount of hazardous waste generated in the last year?

3. Efficiency

Has your company improved the efficiency of operations so as to reduce the amount of hazardous waste generated?

Yes ☐ No ☒

If yes, please describe it briefly and state when it was instituted.

What amount of waste reduction was achieved in the last year?

4. Recycling on-site

Does your company's waste reduction program include a hazardous waste recycling operation on-site?

Yes ☐ No ☒

If yes, please briefly describe the recycling operation and state when it was instituted.

What amount of waste reduction was achieved in the last year?

5. Treatment on-site

Does your company's hazardous waste reduction program include on site waste treatment which minimizes the toxicity or amount of hazardous waste generated?

Yes ☐ No ☒

If yes, please briefly describe the treatment operation and state when it was instituted.

To what extent has the treatment operation reduced toxicity or reduced the amount of hazardous waste generated in the past year?

NOTE: Proposed for 1986 is transformer decontamination project to eliminate PCB waste, a solvent distillation system installation and an oil/water seperator installation.

U.S. Department of Transportation
United States Coast Guard

Commanding Officer
U.S. Coast Guard Yard

Curtis Bay
Baltimore, MD 21226
Phone: 789-1600
Ext: 320

io-110
5100
~~13 Jan 1986~~
~~6 Mar 1986~~
6 Mar 1986

State of Maryland
Waste Management Administration
Hazardous Waste Division
201 West Preston Street
Baltimore, Maryland 21201

Dear Sir:

In accordance with the state of Maryland regulations dealing with hazardous waste, the enclosed annual report is forwarded for the U.S. Coast Guard YARD, Curtis Bay.

If you have any questions in this matter, please contact me at (301) 789-1600 Ext. 209/320.

Sincerely,

~~Joseph E. Botts~~ E. L. Warble
By Direction of the
Commanding Officer, YARD

Encl: Annual Hazardous Waste Report

File Copy

ENVIRONMENTAL PROTECTION AGENCY

GENERATOR ANNUAL HAZARDOUS WASTE REPORT FOR 1986

This report is for the calendar year ending December 31, 1986
Read All Instructions Carefully Before Making Any Entries on Form

I. NON-REGULATED STATUS

Complete this section only if you did not generate regulated quantities of hazardous waste at any time during the 1986 calendar year. Circle the one code at right that best describes your status during the entire year (see instructions for explanation of codes).

1 Non-handler
2 Small Quantity Generator
4 Exempt
5 Beneficial Use
9 Out of Business

Please print/type with elite type (12 characters per inch)

This installation's Non-Regulated Status is Expected to Apply:

☐ For 1986 only ☐ Permanently

II. GENERATOR'S EPA I.D. NUMBER

T/A C

F	M	D	4	6	9	0	3	0	7	8	4	4	T	1
1	2											13	14	15

☐ Other _____

C303 ENTRY (OFFICIAL USE ONLY): ☐

III. NAME OF ESTABLISHMENT

U	.	S	.		C	O	A	S	T		G	U	A	R	D		Y	A	R	D														
30																																		69

IV. ESTABLISHMENT MAILING ADDRESS

3	H	A	W	K	I	N	S		P	O	I	N	T		R	O	A	D																	
15	16																																		45

Street or P.O. Box

4	B	A	L	T	I	M	O	R	E	,											M	D			2	1	2	2	6					
15	16																							41	42	47				51					

City or Town — State — Zip Code

V. LOCATION OF ESTABLISHMENT (if different than section IV above)

5	S	A	M	E																															
15	16																																		45

Street or Route number

6																																			
15	16																																		51

City or Town — State — Zip Code

VI. ESTABLISHMENT CONTACT

2	W	A	R	B	L	E	.		E	V	E	R	E	T	T		C	.																	
15	16																																		45

Name (last and first)

3	0	1	-	7	8	4	-	1	6	0	0	Ext 320
46											55	

Phone No. (area code & no.)

VII. CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

J. M. PAYNE, CAPT, Mgr, Industrial Ops			3-6-87
Print/Type Name	Title	Signature	Date Signed

EPA Form 8700-13A(5-80) (Revised 11-85)

Tear out here

ENVIRONMENTAL PROTECTION AGENCY

Generator ANNUAL Hazardous Waste Report for 1986 (cont.)

This report is for the calendar year ending December 31, 1986

Date rec'd: ______ Rec'd by: ______

VIII. GENERATOR'S EPA I.D. NO.

G MD 4 6 9 0 3 0 7 8 4 4 T/A C 1 1

IX. FACILITY NAME (specify facility to which all wastes on this page were shipped)

Chem-Clear of Baltimore, Inc.

X. FACILITY'S EPA I.D. NO.

F MDD 9 8 0 5 5 5 1 8 9

XI. FACILITY ADDRESS

1910 Russell Street
Baltimore, MD 21230

XII. TRANSPORTATION SERVICES USED

Maryland Liquid Waste	MDD 980927156
American Tank Transport	MDD 981045321
A & A Waste Oil	MDD 030330690
Vacuum Services, Inc.	WVD 087303632

XIII. WASTE IDENTIFICATION

Sequence #	Line #	A. Description of Waste	B. DOT Hazard code	C. EPA Hazardous Waste No. (see instructions)	D. Amount of Waste	E. Unit of Measure
	1	Hazardous Waste Liquid NOS NA 9189 Water w/Chrome	1 5	D 0 0 7	3 2 9 0 9	P
	2	Hazardous Waste Solid NOS ORM-E NA 9189	1 5	D 0 0 7	2 2 5 0	P
	3	Hazardous Waste Liquid NOS ORM-E NA 9189	1 5	D 0 0 8	2 5 3 0 7	P
	4	Waste Corrosive Material NOS Corrosive Material UN 1760	0 2	D 0 0 2	6 2 1 5 5	P
	5	Waste Corrosive Liquid NA 9189 Corrosive Material	0 2	D 0 0 2	8 8 9 9	P
	6					
	7					
	8					
	9					
	10					
	11					
	12					

XIV. COMMENTS (enter information by section number—see instructions)

131,520

Tear out here

ENVIRONMENTAL PROTECTION AGENCY

Generator ANNUAL Hazardous Waste Report for 1986 (cont.)

This report is for the calendar year ending December 31, 1986

Date rec'd: _____ Rec'd by: _____

VIII. GENERATOR'S EPA I.D. NO.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
G	M	D	1	4	1	6	1	9	1	0	1	3	T/A	C

IX. FACILITY NAME (specify facility to which all wastes on this page were shipped)

Environmental International Electrical Services, Inc.

X. FACILITY'S EPA I.D. NO.

16	17	18	19	20	21	22	23	24	25	26	27	28
F	M	O	D	9	8	0	1	9	1	7	3	1	5	1	5	1	6

XI. FACILITY ADDRESS

1220 Wyoming Street
Kansas City, MO 64102

XII. TRANSPORTATION SERVICES USED

Hazmat Environmental Group NYD 980769947

XIII. WASTE IDENTIFICATION

Sequence #	Line	A. Description of Waste	B. DOT Hazard Code	C. EPA Hazardous Waste No. (see instructions)	D. Amount of Waste	E. Unit of Measure
29 32	1	Waste Polychlorinated Biphenyls (RQ-10/4.54) ORM-E UN 2315	1,5	U 2 4 5 (35 38) (39 42)	2,5 0 5 (43 46) (47 50) (51 59)	P 60
	2	Waste Polychlorinated Biphenyls (RQ-10/4.54) ORM-E UN 2315	1,5	M 0 0 1	1 2 0	P
	3					
	4					
	5					
	6					
	7					
	8					
	9					
	10					
	11					
	12					

XIV. COMMENTS (enter information by section number—see instructions)

2625

Tear Out here

ENVIRONMENTAL PROTECTION AGENCY

Generator ANNUAL Hazardous Waste Report for 1986 (cont.)

This report is for the calendar year ending December 31, 1986

Date rec'd: _____ Rec'd by: _____

VIII. GENERATOR'S EPA I.D. NO.

TAN C
G M D 4 6 9 0 3 0 7 8 4 4 7 1 1
1 2 13 14 15

IX. FACILITY NAME (Identify facility to which all wastes on this page were shipped)

Chem Fuel

X. FACILITY'S EPA I.D. NO.

F T N D 0 0 0 7 3 7 5 1 1 0
16 28

XI. FACILITY ADDRESS

1000 Market Street
Portland, TN 37148

XII. TRANSPORTATION SERVICES USED

D & J Transportation Specialists, Inc. NYD 088658646

XIII. WASTE IDENTIFICATION

Sequence #	Line	A. Description of Waste	B. DOT Hazard code	C. EPA Hazardous Waste No. (see instructions)		D. Amount of Waste	E. Unit of Measure
	1	Waste Mercury, Metallic ORM-B, NA 2809	1 4	D 0 0 9		9 1	P
	2	Waste Paint Related Material Flammable Liquid NA 1263	0 8	D 0 0 1		3 0 , 2 5 8	P
	3	Waste Adhesive Flammable Liquid UN 1133	0 8	D 0 0 1		2 8 4	P
	4	Waste Oil, Flammable Liquid NOS NA 1270	0 8	D 0 0 1		3 , 0 4 6	P
	5	Waste Acid Liquid NOS Corrosive Material NA 1760	0 2	D 0 0 2		9 4	P
	6	Waste Oil, NOS Combustible Liquid NA 1270	0 1	D 0 0 7	D 0 0 8	3 , 8 1 1	P
	7	Waste Fuel Oil, Combustible Liquid NA 1993	0 1	D 0 0 1		1 4 , 0 6 5	P
	8	Hazardous Waste Liquid, NOS ORM-E NA 9189	1 5	D 0 0 7		7 , 3 1 2	P
	9	Waste Flammable Liquid, NOS Flammable UN 1993	0 8	D 0 0 1		4 , 9 4 8	P
	10	Waste Battery, wet filled with Alkali Corrosive Matl. UN 2795	0 2	D 0 0 9	D 0 0 2	4 9 , 2 6 9	P
	11	Waste Oxidizer, NOS Oxidizer UN 1479	1 6	D 0 0 3		3 8 2	P
	12	Waste Oxidizer, NOS Oxidizer UN 1479	1 6	D 0 0 8	D 0 0 3	7 0	P

Tear Out Here

XIV. COMMENTS (Enter information by section number—see instructions)

113,630

247,775 ##

ENVIRONMENTAL PROTECTION AGENCY

Generator ANNUAL Hazardous Waste Report for 1986 (cont.)

This report is for the calendar year ending December 31, 1986

Date rec'd: ____________ Rec'd by: ____________

VIII. GENERATOR'S EPA I.D. NO.

TA C

GMD469030784411

IX. FACILITY NAME (specify facility to which all wastes on this page were shipped)

Chem Fuel

X. FACILITY'S EPA I.D. NO.

FTND000737510

XI. FACILITY ADDRESS

1000 Market Street
Portland, TN 37148

XII. TRANSPORTATION SERVICES USED

D & J Transportation Specialists, Inc. NYD 088658646

XIII. WASTE IDENTIFICATION

Sequence #	Line #	A. Description of Waste	B. DOT Hazard code	C. EPA Hazardous Waste No. (see instructions)	D. Amount of Waste	E. Unit of Measure
	1	Waste Poisonous Liquid NOS Poison B, UN 2810	18	D007	94	P
	2	Waste Flammable Solid NOS Flammable Solid UN 1325	09	D001	1,400	P
	3	Waste Calcium Hypochlorite Mixture, Oxidizer UN 1748	16	[illegible]	46	P
	4	Waste Alkaline Corrosive Lqd. NOS Corrosive Material NA 1719	02	D002	28	P
	5	Waste Battery Fluid, Acid Corrosive Material UN 2796	02	D002	23	P
	6	Waste Mercury Compound, Solid NOS Poison B, UN 2025	18	[illegible]	73	P
	7	Waste Corrosive Solid, NOS Corrosive Material UN 1759	02	D002	405	P
	8	Waste Acetone Flammable Liquid UN 1090	08	D001	21	P
	9	Waste Ethylene Glycol Monoethyl Ether, Combustible Lqd UN 1188	01	[illegible]	451	P
	10	Waste Styrene Monomer Flammable Liquid UN 2055	08	D001	451	P
	11	Hazardous Waste Solid NOS ORM-E, NA 9189	15	[illegible]	3,500	P
	12					

XIV. COMMENTS (enter information by section number—see instructions)

6492

254,267 1986 total

OFFICE OF ENVIRONMENTAL PROGRAMS
WASTE MANAGEMENT ADMINISTRATION

Hazardous Waste Generator Waste Reduction Program

-Please complete both sides-

Company: U. S. Coast Guard YARD (Name) MD 4690307844 (EPA ID NUMBER)

Mailing Address: Hawkins Point Road (Name) Baltimore, MD (City) 21226 (Zip Code)

Location of Generator Site: Same (if different from mailing address)

Contact Person: Everett C. Warble (Name) 789-1600 Ext. 320 (Telephone Number)

Everett C. Warble (Signature) Safety & Occupational Health Manager (Title)

Please provide information about your company's hazardous waste minimization program. (If more space is needed, please answer on a separate sheet of paper and attach it to the questionnaire).

1. Separation

Is your Company's waste collection system designed to decrease the volume of hazardous waste for disposal by separating recyclable from non-recyclable materials?

Yes [X] No [ ]

Is your Company's waste collection system designed to decrease the volume of hazardous waste by keeping hazardous waste separate from non-hazardous waste?

Yes [X] No [ ]

If yes, has the system been improved in the past year to further reduce the amount of hazardous waste for disposal?

Yes [ ] No [X]

What reduction in volume was achieved in the past year?

2. Substitution

Has your Company substituted a hazardous material with a non-hazardous or less hazardous material to reduce either the amount or toxicity of hazardous waste generated by your operation?

Yes [X] No [ ]

If yes, when was the substitute introduced, and to what extent has it reduced the toxicity or amount of hazardous waste generated in the last year?

October 1986. Decreased hazardous waste by approximately 8,340 pounds in 1986. It will have greater effect in the out years when all Coast Guard ships have ceased using zinc chromate as main engine coolant.

3. Efficiency

Has your Company improved the efficiency of its operations so as to make a waste stream that was sent off-site for disposal available for recycling?

Yes [ ] No [X]

If yes, please describe the improvement and state when it was instituted.

Has your company improved the efficiency of operation so as to reduce the amount of hazardous waste generated?

Yes [ ] No [X]

If yes, please describe the improvement and state when it was instituted.

What amount of waste reduction was achieved in the last year?

4. Recycling on-site

Does your Company's waste reduction program include a hazardous waste recycling operation on-site?

Yes ☐ No ☒

If yes, please briefly describe the recycling operation and state when it was instituted.

What amount of waste reduction was achieved in the last year?

4A. Recycling off-site

Does your Company's hazardous waste reduction program include use of an off-site recycling service?

Yes ☐ No ☒

If yes, please describe the recycling service that you use and state when its use was initiated.

What amount of waste reduction was achieved by use of the off-site recycling services last year?

Will investigate rental of solvents in 1987 for a future reduction.

5. Treatment on-site

Does your Company's hazardous waste reduction program include on-site waste treatment which minimizes the toxicity or amount of hazardous waste generated?

Yes ☐ No ☒

If yes, please briefly describe the treatment operation and state when it was instituted.

To what extent has the treatment operation reduced toxicity or reduced the amount of hazardous waste generated in the past year?

U.S. Department of Transportation
United States Coast Guard

Commanding Officer
U.S. Coast Guard Yard

Curtis Bay
Baltimore, MD 21226
Phone: 789-1600
Ext: 320

io-110
5100
06 Mar 1987

State of Maryland
Waste Management Administration
Hazardous Waste Division
201 West Preston Street
Baltimore, Maryland 21201

Dear Sir:

In accordance with the state of Maryland regulations dealing with hazardous waste, the enclosed annual report is forwarded for the U.S. Coast Guard YARD, Curtis Bay.

If you have any questions in this matter, please contact me at (301) 789-1600 Extension 209 or 320.

Sincerely,

ED WARBLE
Safety & Occupational
Health Manager
By direction of the
Commanding Officer, YARD

Encl: Annual Hazardous Waste Report

Safety Off. Copy

OMB#: 2050-0024 Expires 12-31-88

BEFORE COPYING FORM, ATTACH SITE IDENTIFICATION LABEL OR ENTER:

SITE MD4690307844
US COAST GUARD YARD
HAWKINS POINT RD
BALTIMORE MD 21226
ATTN: Ed Warble

EPA I.

FORM **IC**

MARYLAND HAZARDOUS AND SOLID WASTE MANAGEMENT ADMINISTRATION

1987 Hazardous Waste Generation and Shipment Report

IDENTIFICATION AND CERTIFICATION

WHO MUST COMPLETE THIS FORM? Form IC must be completed by every site that received this package.

INSTRUCTIONS: Please read the detailed instructions beginning on page 8 of the 1987 Hazardous Waste Generation and Shipment Report Instructions booklet before completing this form.

Complete Sections I through IV and Sections VI through IX immediately. Complete Section V, certification, after you have finished the full report package.

SEC. I. Site name and physical location which may differ from the mailing address. Complete items A through G.
Mark [X] for items A, B, C, D, F, and G if same as label; if different, enter corrections. If label is absent, enter information.

A. Site/company name — Same as label [X] — or —

B. EPA ID No. — Same as label [X] — or —

C. Address number and street name of physical location - If not known, enter industrial park, building name or other physical location description — Same as label [X] — or —

D. City, town, village, etc. — Same as label [X] — or —

E. County: ANNE ARUNDEL

F. State — Same as label [X] — or —

G. Zip Code — Same as label [X] — or —

SEC. II. Mailing address of site.
Mark [X] for A, B, C, and D if same as label; if different, enter corrections.

A. Number and street name of mailing address — Same as label [X] — or —

B. City, town, village, etc. — Same as label [X] — or —

C. State — Same as label [X] — or —

D. Zip Code — Same as label [X] — or —

SEC. III. Name, title, and telephone number of the person who should be contacted if questions arise regarding this report.

A. Please print: Last name	First name	M.I.	B. Title	C. Telephone
WARBLE	EVERETT	C.	Safety & Occup. Health Manager	(301) 789-1600 Extension 320

SEC. IV. Enter the Standard Industrial Classification (SIC) Code that describes the principal products, group of products, produced or distributed, or the services rendered at the site's physical location. Enter more than one SIC Code only if no one industry description includes the combined activities of the site. SIC codes are listed beginning on page 1 of the 1987 Hazardous Waste Report Codebook.

A.	B.	C.	D.	E.	F.
3731	4499				

SEC V. I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

A. Please print: Last name	First name	M.I.	Title
PAYNE	JERRY	M.	Manager, Industrial Oper.

B. Signature — Date of signature: Mo. Day Yr.

OVER —>

SEC. VI. Does this site's EPA ID authorize hazardous waste generation?

- ☐ NO ——→ SKIP TO SECTION VII.
- ☒ YES ——→ Did this site generate any hazardous waste during 1987?
  - ☐ YES —— READ DETAILED INSTRUCTION ON PAGE 9 OF THE 1987 HAZARDOUS WASTE GENERATION AND SHIPMENT REPORT INSTRUCTIONS BOOKLET FOR ACUTE AND ACCUMULATION LIMITS. MARK [X] NEXT TO THE HAZARDOUS WASTE GENERATION QUANTITY CATEGORY THAT APPLIED TO THIS SITE DURING 1987.
    - ☒ Category 1: More than 1000 kg (2,200 lb) in one or more months
    - ☐ Category 2: More than 100 kg (220 lb) but no more than 1000 kg (2,200 lb) in any single month
    - ☐ Category 3: No more than 100 kg (220 lb) in any single month
      - ☐ Mark [X] if this site changed from Category 1 to Category 2 or 3 due to waste minimization activity conducted during 1986 or 1987.
  - ☐ NO —— CONTINUE BELOW, MARK [X] NEXT TO ALL THAT APPLY.
    - ☐ Generated, excluded or delisted wastes
    - ☐ Generated hazardous waste prior to 1987 but do not expect to generate in the future - MARK [X] FOR REASON IN ONE BOX BELOW
      - ☐ Waste was from one-time event(s) (e.g. spills, remedial actions, etc.)
      - ☐ Waste minimization activity undertaken during 1986 or 1987
      - ☐ Out of business
    - ☐ Generated hazardous waste prior to 1987 and expect to generate in the future
    - ☐ Never generated before but expect to generate in the future
    - ☐ Never generated and do not expect to generate in the future - MARK [X] FOR REASON IN ONE BOX BELOW
      - ☐ Protective notifier only
      - ☐ Misunderstood the requirements
      - ☐ Notified to secure transportation services
      - ☐ Other EXPLAIN REASON FOR GENERATOR NOTIFICATION IN COMMENTS

SEC. VII. Does this site have RCRA Interim Status or a RCRA permit to treat, store, or dispose hazardous waste?

- ☒ NO ——→ SKIP TO SECTION VIII
- ☐ YES ——→ Did the site treat, store, or dispose (T/S/D) hazardous waste in RCRA-regulated units during 1987?
  - ☐ YES ——→ SKIP TO SECTION VIII
  - ☐ NO ——→ CONTINUE BELOW, MARK [X] NEXT TO ALL THAT APPLY
    - ☐ T/S/D excluded waste during 1987
    - ☐ T/S/D hazardous waste in exempt units during 1987
    - ☐ T/S/D hazardous waste prior to 1987 but did not T/S/D waste during 1987. MARK [X] IN ONE BOX BELOW
      - ☐ T/S/D will resume in the future
      - ☐ Have notified of planned closure
      - ☐ Site is in closure or post closure
    - ☐ Never T/S/D hazardous waste prior to 1987 but: MARK [X] IN ONE BOX BELOW
      - ☐ Expect to T/S/D hazardous waste in the future
      - ☐ Do not expect to T/S/D hazardous waste in the future - EXPLAIN REASON FOR INTERIM STATUS OR PERMIT IN COMMENTS

SEC. VIII. Do you wish to withdraw this site's generator notification or EPA Part A permit application?

Withdraw generator notification	☐ Yes	☒ No
Withdraw Part A permit application	☐ Yes	☐ No

SEC. IX. Does this site have an area not requiring a RCRA Part A or Part B permit that is used exclusively for the short term accumulation of hazardous waste?

- ☐ NO
- ☒ YES —— DOES THE AREA HAVE:

			ENTER THE NUMBER OF TANKS AND THEIR TOTAL CAPACITY IN GALLONS.
Containers	☒ No	☐ Yes	
Tanks	☐ No	☒ Yes —	3 Number 2350 Gallon capacity

Comments:

BEFORE COPYING FORM, ATTACH SITE IDENTIFICATION LABEL OR ENTER:

SITE NAME

MD4690307844
US COAST GUARD YARD
HAWKINS POINT RD
BALTIMORE MD 21226
ATTN: Ed Warble

MARYLAND HAZARDOUS AND SOLID WASTE MANAGEMENT ADMINISTRATION

1987 Hazardous Waste Report and Shipment Report

FORM GS

WASTE GENERATION AND SHIPMENT

WHO MUST COMPLETE THIS FORM? Form GS must be completed by every site that generated hazardous waste on site or shipped hazardous waste off site during 1987.

☐ Mark ☒ if you are not required to complete Form GS.

INSTRUCTIONS: Please read the detailed instructions beginning on page 12 of the 1987 Hazardous Waste Generation and Shipment Report instructions booklet before completing this form.

Make and complete a photocopy of this form for each hazardous waste generated on site or shipped off site during 1987.

Complete Sections I through IV. Throughout this form enter "DK" if the information requested is not known or is not available; enter "NA" if the information requested is not applicable.

Sec. I

A. Waste description (Instruction Page 12)
WASTE PAINTS, THINNERS, GASOLINE AND OILS USED IN SHIP REPAIR AND OVERHAUL.

B. EPA hazardous waste code (Page 12): D001 | NA | NA | NA

C. State hazardous waste code (Page 12): NA | NA | NA

D. SIC code (Page 14): 3731

E. Source code (Page 15): 10

F. Waste form code (Page 15): H82

G. Waste minimization results (Page 15): B

Sec. II

	A. Organics (Page 14)	B. Water (Page 16)	C. Total Solids (Page 16)	D. Suspended Solids (Page 16)	E. STU (Page 16)
High					
Low					
Test / Note	Test / D	Note / D	Note / D	Note / D	UOM / Note / D

F. Trace Metals (Page 16) Note: A

Metal	High	Low	Test
1.			
2.			
3.			
4.			
5.			
6.			

G. pH (Page 16)	H. Flashpoint (Page 18)	I. Cyanides (Page 19)	J. Halogens (Page 20)	K. Radioactive (Page 20)
High	High °F	High	High	Yes ☐
Low	Low °F	Low	Low	No ☐
Note: A	Note: B	Test / Note: A	Note: D	Note: D

Sec. III

A. 1986 quantity hazardous waste generated (Instruction Page 23): 4948

B. 1987 quantity hazardous waste generated (Page 23): 7580

C. UOM (Page 24): P

D. Quantity (Page 24): NA ☐ lbs/gal ☐ kg

E. Quantity hazardous waste on site on January 1, 1987 (Page 21): 0

F. Quantity hazardous waste remaining on site on December 31, 1987 (Page 21): 0

Sec. IV

A. EPA ID No. of facility to which waste was shipped (Instruction Page 22)	B. Number of shipments (Page 22)	C. Transport mode (Page 22)	D. Off-site T/S/D/R code (Page 22)	E. Total quantity shipped (Page 23)
NYD044836679	1	H	M50 / NA	5504

Comments:
SEE SECTION IV BOX A CONTINUED ON SUPPLEMENTAL PAGES.

WHO MUST COMPLETE THIS FORM? Form GS must be completed by every site that generated hazardous waste on site or shipped hazardous waste off site during 1987.

☐ Mark ☒ if you are not required to complete Form GS.

INSTRUCTIONS: Please read the detailed instructions beginning on page 12 of the 1987 Hazardous Waste Generation and Shipment Report instructions booklet before completing this form.

Make and complete a photocopy of this form for each hazardous waste generated on site or shipped off site during 1987.

Complete Sections I through IV. Throughout this form enter "UK" if the information requested is not known or is not available; enter "NA" if the information requested is not applicable.

Sec. I A. Waste description instructions Page 10

B. EPA hazardous waste code Page 12

C. State hazardous waste code Page 13

D. SIC code Page 13

E. Source code Page 13

F. Waste form code Page 13

G. Waste minimization code Page 14

Sec. II

A. Organics Page 14	B. Water Page 15	C. Total Solids Page 12	D. Suspended Solids Page 15	E. BTU Page 12	F. Toxic Metals Page 15 — None ☐
High ☐	High ☐	High ☐	High ☐	High ☐	Metal / High / Low / Trace
Low ☐	Low ☐	Low ☐	Low ☐	Low ☐	a. ☐ ☐ ☐ ☐
Trace ☐ None ☐	None ☐	None ☐	None ☐	UOM ☐ None ☐	b. ☐ ☐ ☐ ☐
					c. ☐ ☐ ☐ ☐
					d. ☐ ☐ ☐ ☐
					e. ☐ ☐ ☐ ☐
					f. ☐ ☐ ☐ ☐

G. pH Page 16	H. Reactivity Page 16	I. Cyanides Page 16	J. Halogens Page 20	K. Radioactive Page 20
High ☐	High ☐ %	High ☐	High ☐	Yes ☐
Low ☐	Low ☐ %	Low ☐	Low ☐	No ☐
None ☐	None ☐	Trace ☐ None ☐	None ☐	None ☐

Sec. III

A. 1986 quantity hazardous waste generated instructions Page 20

B. 1987 quantity hazardous waste generated Page 20

C. UOM Page 21

D. Density Page 21 ☐ lbs/gal ☐ kg

E. Quantity hazardous waste on site on January 1, 1987 Page 21

F. Quantity hazardous waste remaining on site on December 31, 1987 Page 21

Sec. IV

A. EPA ID No. of facility to which waste was shipped instructions Page 22	B. Number of shipments Page 22	C. Transport mode Page 22	D. Off-site T/S/D/R code Page 22	E. Total quantity shipped Page 22
PAD 085 690 592	1	H	M10 NA	1376

Comments:

BEFORE COPYING FORM, ATTACH SITE IDENTIFICATION LABEL OR ENTER:

SITE NAME

MD4690307844
US COAST GUARD YARD
HAWKINS POINT RD
BALTIMORE MD 21226
ATTN: Ed Warble

MARYLAND HAZARDOUS AND SOLID WASTE MANAGEMENT ADMINISTRATION

1987 Hazardous Waste Report and Shipment Report

FORM GS

WASTE GENERATION AND SHIPMENT

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Complete Sections I through IV. Throughout this form enter "DK" if the information requested is not known or is not available; enter "NA" if the information requested is not applicable.

Sec. I A. Waste identification Instruction Page 12

B. EPA hazardous waste code Page 12

C. State hazardous waste code Page 12

D. SIC code Page 12

E. Source code Page 13

F. Waste form code Page 13

G. Waste minimization code Page 13

Sec. II

	A. Cyanide Instruction Page 14	B. Metals Page 15	C. Total Solids Page 15	D. Suspended Solids Page 15	E. BTU Page 16	F. Toxic Metals Page 16
	High ☐ Low ☐ Trace ☐ None ☐	High ☐ Low ☐ None ☐	High ☐ Low ☐ None ☐	High ☐ Low ☐ None ☐	High ☐ Low ☐ UDK ☐ None ☐	None ☐

F. Toxic Metals Page 16

	Silver	High	Low	Trace
1.	☐	☐	☐	☐
2.	☐	☐	☐	☐
3.	☐	☐	☐	☐
4.	☐	☐	☐	☐
5.	☐	☐	☐	☐
6.	☐	☐	☐	☐

G. pH Page 16	H. Flashpoint Page 16	I. Cyanides Page 16	J. Halogens Page 20	K. Radioactive Page 20
High ☐ Low ☐ None ☐	High ☐ °F Low ☐ °F None ☐	High ☐ Low ☐ Trace ☐ None ☐	High ☐ Low ☐ None ☐	Yes ☐ No ☐ None ☐

Sec. III

A. 1987 quantity hazardous waste generated Instruction Page 5b

B. 1987 quantity nonhazardous waste generated Page 20

C. UOM Page 21

D. Density Page 21 ☐ lbs/gal ☐ kg

E. Quantity hazardous waste on site on January 1, 1987 Page 21

F. Quantity hazardous waste remaining on site on December 31, 1987 Page 21

Sec. IV

A. EPA ID No. of facility to which waste was shipped Instruction Page 22	B. Number of shipments Page 22	C. Transport mode Page 22	D. Off-site T/S/D/R code Page 22	E. Total quantity shipped Page 5b
A L D 0 1 0 1 6 2 4 6 4	1	H	M 5 0 N A	3 0 0

Comments:

BEFORE COPYING FORM, ATTACH SITE IDENTIFICATION LABEL OR ENTER:

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US COAST GUARD YARD
HAWKINS POINT RD
BALTIMORE MD 21226
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MARYLAND HAZARDOUS AND SOLID WASTE MANAGEMENT ADMINISTRATION

1987 Hazardous Waste Report and Shipment Report

FORM **GS**

WASTE GENERATION AND SHIPMENT

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Complete Sections I through IV. Throughout this form enter "DK" if the information requested is not known or is not available; enter "NA" if the information requested is not applicable.

Sec. I A. Waste description Instructions Page 12

B. EPA hazardous waste code Page 12

C. State hazardous waste code Page 13

D. SIC code Page 14

E. Source code Page 14

F. Waste form code Page 15

G. Waste solidification code Page 16

Sec. II

A. Cyanide Instructions Page 16	B. Water Page 16	C. Total Solids Page 16	D. Suspended Solids Page 16	E. BTU Page 17	F. Toxic Metals Page 18
High ☐	High ☐	High ☐	High ☐	High ☐	State ☐
Low ☐	Low ☐	Low ☐	Low ☐	Low ☐	Metal / High / Low / Test
Test ☐ None ☐	None ☐	None ☐	None ☐	Unk ☐ None ☐	i. ☐ ☐ ☐ ☐
					ii. ☐ ☐ ☐ ☐
					iii. ☐ ☐ ☐ ☐
					iv. ☐ ☐ ☐ ☐
					v. ☐ ☐ ☐ ☐
					vi. ☐ ☐ ☐ ☐

G. pH Page 19	H. Flashpoint Page 19	I. Cyanides Page 19	J. Halogens Page 20	K. Radioactive Page 20
High ☐	High ☐ °F	High ☐	High ☐	Yes ☐
Low ☐	Low ☐ °F	Low ☐	Low ☐	No ☐
None ☐	None ☐	Test ☐ None ☐	None ☐	None ☐

Sec. III

A. 1987 quantity hazardous waste generated Instructions Page 20

B. 1987 quantity hazardous waste generated Page 20

C. UOM Page 21

D. Density Page 21 ☐ lbs/gal ☐ kg

E. Quantity hazardous waste on site on January 1, 1987 Page 21

F. Quantity hazardous waste remaining on site on December 31, 1987 Page 21

Sec. IV

A. EPA ID No. of facility to which waste was shipped Instructions Page 22	B. Number of shipments Page 22	C. Transport mode Page 22	D. Off-site T/S/D/R code Page 22	E. Total quantity shipped Page 23
A L D 0 7 0 5 1 3 7 6 7	1	H	M 5 0	N A	4 0 0

Comments:

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1987 Hazardous Waste Report and Shipment Report

FORM **GS**

WASTE GENERATION AND SHIPMENT

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Sec. I A. Waste description Instruction Page 12: COMBUSTIBLE SOLVENT CONTAINING DICHLOREMETHANE AND TETRACHLOROETHANE - STODDARD SOLVENT

B. EPA hazardous waste code Page 12: F 0 0 2 | N A | N A | N A

C. State hazardous waste code Page 13: N A | N A | N A

D. SIC code Page 13: 3 7 3 1

E. Source code Page 13: 1 0

F. Waste form code Page 13: H 6 2

G. Waste minimization source Page 13: B

Sec. II

A. Organics Instruction Page 14	B. Water Page 15	C. Total Solids Page 15	D. Suspended Solids Page 15	E. BTU Page 16	F. Toxic Metals Page 16 Note: B
High ☐ Low ☐ Test ☐ Note: D	High ☐ Low ☐ Note: D	High ☐ Low ☐ Note: D	High ☐ Low ☐ Note: D	High ☐ Low ☐ UCM ☐ Note: D	Metal / High / Low / Test: 1. ☐ ☐ ☐ ☐ 2. ☐ ☐ ☐ ☐ 3. ☐ ☐ ☐ ☐ 4. ☐ ☐ ☐ ☐ 5. ☐ ☐ ☐ ☐ 6. ☐ ☐ ☐ ☐

G. pH Page 16	H. Flashpoint Page 16	I. Cyanides Page 16	J. Halogens Page 20	K. Radioactive Page 20
High ☐ Low ☐ Note: A	High ☐ °F Low ☐ °F Note: B	High ☐ Low ☐ Test ☐ Note: A	High ☐ Low ☐ Note: D	Yes ☐ No ☐ Note: D

Sec. III

A. 1986 quantity hazardous waste generated Instruction Page 20	B. 1987 quantity hazardous waste generated Page 20	C. UOM Page 21	D. Density Page 21
1 4 0 6 5	4 5 9	P	☐ = N A ☐ lbs/gal ☐ kg

E. Quantity hazardous waste on site on January 1, 1987 Page 21: 0

F. Quantity hazardous waste remaining on site on December 31, 1987 Page 21: 0

Sec. IV

A. EPA ID No. of facility to which waste was shipped Instruction Page 22	B. Number of shipments Page 22	C. Transport mode Page 22	D. Off-site T/S/D/R code Page 22	E. Total quantity shipped Page 22
A L D 0 0 0 6 2 2 4 6 4	1	H	M 5 0 N A	4 5 9

Comments:

BEFORE COPYING FORM, ATTACH SITE IDENTIFICATION LABEL OR ENTER:

SITE NAME

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ATTN: Ed Warble

MARYLAND HAZARDOUS AND SOLID WASTE MANAGEMENT ADMINISTRATION

1987 Hazardous Waste Report and Shipment Report

FORM GS

WASTE GENERATION AND SHIPMENT

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Make and complete a photocopy of this form for each hazardous waste generated on site or shipped off site during 1987.

Complete Sections I through IV. Throughout this form enter "DK" if the information requested is not known or is not available; enter "NA" if the information requested is not applicable.

Sec. I

A. Waste description (Instruction Page 12)
WASTE OIL, HYDRAULIC FLUIDS AND CHLORINATED SOLVENTS USED IN THE MACHINE SHOP

B. EPA hazardous waste code (Page 12): F001 | NA | NA | NA

C. State hazardous waste code (Page 13): NA | NA | NA

D. SIC code (Page 13): 3731

E. Source code (Page 13): 10

F. Waste form code (Page 13): H83

G. Waste reclamation code (Page 13): B

Sec. II

A. Organics (Instruction Page 14)	B. Water (Page 15)	C. Total Solids (Page 15)	D. Suspended Solids (Page 15)	E. BTU (Page 15)
High ☐	High ☐	High ☐	High ☐	High ☐
Low ☐	Low ☐	Low ☐	Low ☐	Low ☐
Test ☐ Note D	Note D	Note D	Note D	UOM ☐ Note D

F. Toxic Metals (Page 15) Note B

	Metal	High	Low	Test
1.	☐	☐	☐	☐
2.	☐	☐	☐	☐
3.	☐	☐	☐	☐
4.	☐	☐	☐	☐
5.	☐	☐	☐	☐
6.	☐	☐	☐	☐

G. pH (Page 15)	H. Flashpoint (Page 16)	I. Cyanides (Page 17)	J. Halogens (Page 50)	K. Reactivities (Page 50)
High ☐.☐	High ☐☐☐ °F	High ☐	High 0	Yes ☐
Low ☐.☐	Low ☐☐☐ °F	Low ☐	Low ☐	No ☐
Note A	Note B	Test ☐ Note A	Note ☐	Note D

Sec. III

A. 1986 quantity hazardous waste generated (Instruction Page 20): 0

B. 1987 quantity hazardous waste generated (Page 20): 1480

C. UOM (Page 21): P

D. Density (Page 21): ☐☐.☐ NA ☐ lbs/gal ☐ kg

E. Quantity hazardous waste on site on January 1, 1987 (Page 21): 0

F. Quantity hazardous waste remaining on site on December 31, 1987 (Page 21): 0

Sec. IV

A. EPA ID No. of facility to which waste was shipped (Instruction Page 22)	B. Number of shipments (Page 22)	C. Transport mode (Page 23)	D. Off-site T/S/D/R code (Page 23)	E. Total quantity shipped (Page 23)
NYD049836679	1	H	M50 NA	1480

Comments:

PLEASE CONFIRM FORM. ATTACH SITE IDENTIFICATION LABEL

MARYLAND HAZARDOUS AND

☐ Mark ☒ if you are not required to complete Form GS.

INSTRUCTIONS: Please read the detailed instructions beginning on page 12 of the 1987 Hazardous Waste Generation and Shipment Report instructions booklet before completing this form.

Make and complete a photocopy of this form for each hazardous waste generated on site or shipped off site during 1987.

Complete Sections I through IV. Throughout this form enter "0K" if the information requested is not known or is not available; enter "NA" if the information requested is not applicable.

Sec. I — A. Waste description (Instruction Page 12)

WASTE OXIDIZER

B. EPA hazardous waste code (Page 12)	C. State hazardous waste code (Page 12)	D. SIC code (Page 13)	E. Source code (Page 14)	F. Waste form code (Page 15)	G. Waste minimization code (Page 16)
D001 / N/A / N/A / N/A	N/A / N/A / N/A	3731	10	D0K	B

Sec. II

A. Cyanide (Instruction Page 14)	B. Water (Page 15)	C. Total Solids (Page 15)	D. Suspended Solids (Page 15)	E. BTU (Page 16)
High / Low / Test / Note D	High / Low / Note D	High / Low / Note D	High / Low / Note D	High / Low / UOM / Note D

F. Toxic Metals (Page 16) Note B

	Metal	High	Low	Test
I.				
II.				
III.				
IV.				
V.				
VI.				

G. pH (Page 16)	H. Flashpoint (Page 18)	I. Cyanides (Page 19)	J. Halogens (Page 20)	K. Radioactive (Page 20)
High / Low / Note A	High / Low °F / Note B	High / Low / Test / Note A	High / Low / Note D	Yes / No / Note D

Sec. III

A. 1986 quantity hazardous waste generated (Instruction Page 20)	B. 1987 quantity hazardous waste generated (Page 20)	C. UOM (Page 21)	D. Density (Page 21)
0	15	P	N/A ☐ lbs/gal ☐ kg

E. Quantity hazardous waste on site on January 1, 1987 (Page 21)	F. Quantity hazardous waste remaining on site on December 31, 1987 (Page 21)
0	0

Sec. IV

A. EPA ID No. of facility to which waste was shipped (Instruction Page 20)	B. Number of shipments (Page 20)	C. Transport mode (Page 22)	D. Off-site T/S/D/R code (Page 22)	E. Total quantity shipped (Page 22)
NYD049836679	1	H	M72 / N/A	15

Comments:

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SITE NAME

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E BALTIMORE MD 21226
ATTN: Ed Warble

MARYLAND HAZARDOUS AND SOLID WASTE MANAGEMENT ADMINISTRATION

1987 Hazardous Waste Report and Shipment Report

FORM **GS**

WASTE GENERATION AND SHIPMENT

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Complete Sections I through IV. Throughout this form enter "DK" if the information requested is not known or is not available; enter "NA" if the information requested is not applicable.

Sec. I

A. Waste description (Instructions Page 13): STYRENE MONOMER - INHIBITED. USED IN SHIP AND BOAT REPAIR.

B. EPA hazardous waste code (Page 13)				C. State hazardous waste code (Page 13)		
D001	NA	NA	NA	NA	NA	NA

D. SIC code (Page 13)	E. Source code (Page 13)	F. Waste form code (Page 14)	G. Waste minimization code (Page 14)
3731	10	H99	B

Sec. II

A. Organics (Instructions Page 14)	B. Water (Page 15)	C. Total Solids (Page 15)	D. Suspended Solids (Page 15)	E. BTU (Page 16)	F. Toxic Metals (Page 16) Note: B
High	High	High	High	High	Metal / High / Low / Test
Low	Low	Low	Low	Low	1. / 2. / 3. / 4. / 5. / 6.
Test Note: D	Note: D	Note: D	Note: D	UOM Note: D	

G. pH (Page 16)	H. Flashpoint (Page 16)	I. Cyanides (Page 17)	J. Halogens (Page 20)	K. Radioactive (Page 20)
High	High °F	High	High	Yes ☐
Low	Low °F	Low	Low	No ☐
Note: A	Note: B	Test: A Note	Note: D	Note: D

Sec. III

A. 1988 quantity hazardous waste generated (Instruction Page 20)	B. 1987 quantity hazardous waste generated (Page 20)	C. UOM (Page 21)	D. Density (Page 21)
451	309	P	NA ☐ lbs/gal ☐ kg

E. Quantity hazardous waste on site on January 1, 1987 (Page 21)	F. Quantity hazardous waste remaining on site on December 31, 1987 (Page 21)
0	0

Sec. IV

A. EPA ID No. of facility to which waste was shipped (Instructions Page 22)	B. Number of shipments (Page 22)	C. Transport mode (Page 22)	D. Off-site T/S/D/R code (Page 22)	E. Total quantity shipped (Page 22)
ALD006224644	1	H	M10 NA	309

Comments:

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FORM **GS**

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Sec. I — A. Waste description (Instruction Page 12): WASTE FUEL OIL AND CLEANING SOLVENTS MIXED - USED IN SHIPBOARD MACHINERY INSTALLATION.

B. EPA hazardous waste code (Page 12)	C. State hazardous waste code (Page 13)	D. SIC code (Page 13)	E. Source code (Page 14)	F. Waste form code (Page 15)	G. Waste minimization results (Page 15)
D001, D002, NA, NA	NA, NA, NA	3731	10	H183	B

Sec. II

A. Organics (Instruction Page 14)	B. Water (Page 15)	C. Total Solids (Page 16)	D. Suspended Solids (Page 16)	E. BTU (Page 16)	F. Trace Metals (Page 16) Note: B
High / Low / Test / Note: D	High / Low / Note: D	High / Low / Note: D	High / Low / Note: D	High / Low / UOM / Note: D	Metal: 1. 2. 3. 4. 5. 6. — High / Low / Test

G. pH (Page 16)	H. Flashpoint (Page 16)	I. Cyanides (Page 18)	J. Halogens (Page 20)	K. Radioactive (Page 20)
High / Low / Note: B	High / Low °F / Note: B	High / Low / Test / Note: A	High / Low / Note: D	Yes ☐ / No ☐ / Note: D

Sec. III

A. 1988 quantity hazardous waste generated (Instruction Page 20)	B. 1987 quantity hazardous waste generated (Page 20)	C. UOM (Page 21)	D. Density (Page 21)
0	360	P	NA ☐ lbs/gal ☐ kg

E. Quantity hazardous waste on site on January 1, 1987 (Page 21)	F. Quantity hazardous waste remaining on site on December 31, 1987 (Page 21)
0	0

Sec. IV

A. EPA ID No. of facility to which waste was shipped (Instruction Page 22)	B. Number of shipments (Page 22)	C. Transport mode (Page 22)	D. On-site T/S/D/R code (Page 23)	E. Total quantity shipped (Page 23)
PAD064035819	1	H	M72, NA	300

Comments:

BEFORE COPYING FORM, ATTACH SITE IDENTIFICATION LABEL OR ENTER:

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E BALTIMORE MD 21226
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1987 Hazardous Waste Report and Shipment Report

FORM GS

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Complete Sections I through IV. Throughout this form enter "DK" if the information requested is not known or is not available; enter "NA" if the information requested is not applicable.

Sec. I

A. Waste description (Instruction Page 12): WASTE PAINT, THINNERS, EPOXY'S, RESINS, LEAD AND SOLVENTS.

B. EPA hazardous waste code (Page 12): D001 F003 F005 D008

C. State hazardous waste code (Page 12): NA NA NA

D. SIC code (Page 13): 3731

E. Source code (Page 13): 10

F. Waste form code (Page 13): H62

G. Waste minimization results (Page 13): B

Sec. II

	A. Organics (Instruction Page 14)	B. Water (Page 15)	C. Total Solids (Page 16)	D. Suspended Solids (Page 17)	E. BTU (Page 18)
High					
Low					
Test / UOM					
Note	D	D	D	D	D

F. Toxic Metals (Page 19) — Note: A

Metal	High	Low	Test
1.			
2.			
3.			
4.			
5.			
6.			

	G. pH (Page 19)	H. Flashpoint (Page 19)	I. Cyanides (Page 19)	J. Halogens (Page 20)	K. Radioactive (Page 20)
High					Yes ☐
Low					No ☐
Test					
Note	A	B	A	D	D

Sec. III

A. Total quantity hazardous waste generated (Instruction Page 20): 0

B. 1987 quantity hazardous waste generated (Page 20): 6571

C. UOM (Page 21): P

D. Density (Page 21): NA ☐ lbs/gal ☐ kg

E. Quantity hazardous waste on site on January 1, 1987 (Page 21): 0

F. Quantity hazardous waste remaining on site on December 31, 1987 (Page 21): 0

Sec. IV

A. EPA ID No. of facility to which waste was shipped (Instruction Page 22)	B. Number of shipments (Page 22)	C. Transport mode (Page 22)	D. Off-site T/S/D/R code (Page 22)	E. Total quantity shipped (Page 22)
AL D000622464	4	H	M50 NA	6371

Comments:

SEE SECTION IV BOX A CONTINUED ON SUPPLEMENTAL PAGE.

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FORM **GS**

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Complete Sections I through IV. Throughout this form enter "DK" if the information requested is not known or is not available; enter "NA" if the information requested is not applicable.

Sec. I A. Waste description Instructions Page 16

B. EPA hazardous waste code Page 17

C. State hazardous waste code Page 17

D. SIC code Page 18

E. Source code Page 19

F. Waste form code Page 17

G. Waste minimization code Page 18

Sec. II A. Organics Instructions Page 14 — High / Low / Total / Note

B. Water Page 15 — High / Low / Note

C. Total Solids Page 15 — High / Low / Note

D. Suspended Solids Page 15 — High / Low / Note

E. BTU Page 15 — High / Low / UOM / Note

F. Trace Metals Page 15 — Note

Metal	High	Low	Test
1.			
2.			
3.			
4.			
5.			
6.			

G. pH Page 15 — High / Low / Note

H. Flashpoint Page 15 — High / Low / Note (°F)

I. Cyanides Page 15 — High / Low / Test / Note

J. Halogens Page 20 — High / Low / Note

K. Radioactive Page 20 — Yes ☐ / No ☐ / Note

Sec. III A. 1986 quantity hazardous waste generated Instructions Page 20

B. 1987 quantity hazardous waste generated Page 20

C. UOM Page 21

D. Density Page 21 — ☐ lbs/gal ☐ kg

E. Quantity hazardous waste on site on January 1, 1987 Page 21

F. Quantity hazardous waste remaining on site on December 31, 1987 Page 21

Sec. IV A. EPA ID No. of facility to which waste was shipped Instructions Page 22

B. Number of shipments Page 22

C. Transport mode Page 22

D. Off-site T/S/D/R code Page 22

E. Total quantity shipped Page 22

A. EPA ID No.	B. No. of shipments	C. Transport mode	D. Off-site T/S/D/R code	E. Total quantity shipped
NYD049836679	1	H	M50 NA	200

Comments:

BEFORE COPYING FORM, ATTACH SITE IDENTIFICATION LABEL OR ENTER:

SITE NAME

MD4690307844
US COAST GUARD YARD
HAWKINS POINT RD
BALTIMORE MD 21226
ATTN: Ed Warble

MARYLAND HAZARDOUS AND SOLID WASTE MANAGEMENT ADMINISTRATION

1987 Hazardous Waste Report and Shipment Report

FORM GS

WASTE GENERATION AND SHIPMENT

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Make and complete a photocopy of this form for each hazardous waste generated on site or shipped off site during 1987.

Complete Sections I through IV. Throughout this form enter "DK" if the information requested is not known or is not available; enter "NA" if the information requested is not applicable.

Sec. I

A. Waste description (Instruction Page 12): COMBUSTIBLE WASTE OIL AND HYDRAULIC FLUID USED IN SHIPBOARD MACHINERY.

B. EPA hazardous waste code (Page 13): D001 | NA | NA | NA

C. State hazardous waste code (Page 13): | NA | NA | NA

D. SIC code (Page 14): 3731

E. Source code (Page 14): 10

F. Waste form code (Page 13): H83

G. Waste minimization code (Page 14): B

Sec. II

A. Organics (Page 14)	B. Water (Page 15)	C. Total Solids (Page 15)	D. Suspended Solids (Page 15)	E. BTU (Page 16)	F. Trace Metals (Page 16) Note: B
High	High	High	High	High	Metal / High / Low / Test
Low	Low	Low	Low	Low	1.
Test Note: D	Note: D	Note: D	Note: D	UOM Note: D	2. 3. 4. 5. 6.

G. pH (Page 15)	H. Flashpoint (Page 15)	I. Cyanides (Page 15)	J. Halogens (Page 20)	K. Radioactive (Page 20)
High	High °F	High	High	Yes ☐
Low	Low °F	Low	Low	No ☐
Note: A	Note: B	Test Note: A	Note: D	Note: D

Sec. III

A. 1986 quantity hazardous waste generated (Instruction Page 20): 14065

B. 1987 quantity hazardous waste generated (Page 20): 4137

C. UOM (Page 21): P

D. Density (Page 21): NA ☐ lbs/gal ☐ kg

E. Quantity hazardous waste on site on January 1, 1987 (Page 21): 0

F. Quantity hazardous waste remaining on site on December 31, 1987 (Page 21): 0

Sec. IV

A. EPA ID No. of facility to which waste was shipped (Instructions Page 22)	B. Number of shipments (Page 22)	C. Transport mode (Page 22)	D. Off-site T/S/D/R code (Page 22)	E. Total quantity shipped (Page 22)
PAD085690592	3	H	M50 NA	1737

Comments: SEE SECTION IV BOX A CONTINUED ON SUPPLEMENTAL PAGE.

WHO MUST COMPLETE THIS FORM? Form GS must be completed by every site that generated hazardous waste on site or shipped hazardous waste off site during 1997.

☐ Mark ☒ if you are not required to complete Form GS.

INSTRUCTIONS: Please read the detailed instructions beginning on page 12 of the 1997 Hazardous Waste Generation and Shipment Report instructions booklet before completing this form.

Make and complete a photocopy of this form for each hazardous waste generated on site or shipped off site during 1997.

Complete Sections I through IV. Throughout this form enter "DK" if the information requested is not known or is not available; enter "NA" if the information requested is not applicable.

Sec. I A. Waste description Instructions Page 12

B. EPA hazardous waste code Page 12

C. State hazardous waste code Page 13

D. RCI code Page 13

E. Source code Page 13

F. Waste State code Page 13

G. Waste minimization source code Page 14

Sec. II

A. Ignitable Instructions Page 14	B. Water Page 15	C. Total Solids Page 15	D. Suspended Solids Page 15	E. BTU Page 15	F. Trace Metals Page 15
High ☐	High ☐	High ☐	High ☐	High ☐	State ☐
Low ☐	Low ☐	Low ☐	Low ☐	Low ☐	Metal / High / Low / Test
Test ☐ None ☐	None ☐	None ☐	None ☐	UOM ☐ None ☐	1. ☐ ☐ ☐ ☐
					2. ☐ ☐ ☐ ☐
					3. ☐ ☐ ☐ ☐
					4. ☐ ☐ ☐ ☐
					5. ☐ ☐ ☐ ☐
					6. ☐ ☐ ☐ ☐

G. pH Page 15	H. Flashpoint Page 15	I. Cyanides Page 15	J. Halogens Page 20	K. Radioactive Page 20
High ☐.☐	High ☐☐☐ °F	High ☐	High ☐	Yes ☐
Low ☐.☐	Low ☐☐☐ °F	Low ☐	Low ☐	No ☐
None ☐	None ☐	Test ☐ None ☐	None ☐	None ☐

Sec. III

A. 1996 quantity hazardous waste generated Instructions Page 20

B. 1997 quantity hazardous waste generated Page 20

C. UOM Page 21

D. Density Page 21 ☐.☐☐ ☐ lbs/gal ☐ kg

E. Quantity hazardous waste on site on January 1, 1997 Page 21

F. Quantity hazardous waste remaining on site on December 31, 1997 Page 21

Sec. IV

A. EPA ID No. of facility to which waste was shipped Instructions Page 22	B. Number of shipments Page 22	C. Transport mode Page 22	D. Off-site T/S/D/R code Page 22	E. Total quantity shipped Page 22
PAD064035819	1	H	M50 / NA	2400

Comments:

BEFORE COPYING FORM, ATTACH SITE IDENTIFICATION LABEL OR ENTER:

SITE NAME

MD4690307844
US COAST GUARD YARD
HAWKINS POINT RD
BALTIMORE MD 21226
ATTN: Ed Warble

MARYLAND HAZARDOUS AND SOLID WASTE MANAGEMENT ADMINISTRATION

1987 Hazardous Waste Report and Shipment Report

FORM GS

WASTE GENERATION AND SHIPMENT

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☐ Mark ☒ if you are not required to complete Form GS.

INSTRUCTIONS: Please read the detailed instructions beginning on page 12 of the 1987 Hazardous Waste Generation and Shipment Report instructions booklet before completing this form.

Make and complete a photocopy of this form for each hazardous waste generated on site or shipped off site during 1987.

Complete Sections I through IV. Throughout this form enter "UK" if the information requested is not known or is not available; enter "NA" if the information requested is not applicable.

Sec. I A. Waste description Instruction Page 12: FLAMMABLE WASTE PAINT RELATED MATERIAL USED IN SHIP REPAIR; MIXTURE OF PAINT AND THINNERS.

B. EPA hazardous waste code Page 12: D001 | NA | NA | NA

C. State hazardous waste code Page 13: NA | NA | NA

D. SIC code Page 13: 3731

E. Source code Page 13: 10

F. Waste form code Page 13: H81

G. Waste minimization results Page 13: B

Sec. II

A. Organics Instruction Page 14	B. Water Page 15	C. Total Solids Page 15	D. Suspended Solids Page 16	E. BTU Page 16
High	High	High	High	High
Low	Low	Low	Low	Low
Test Note D	Note D	Note D	Note D	UOM Note D

F. Trace Metals Page 16 Note B

Metal	High	Low	Test
1.			
2.			
3.			
4.			
5.			
6.			

G. pH Page 18	H. Flashpoint Page 18	I. Cyanides Page 19	J. Halogens Page 20	K. Radioactive Page 20
High	High °F	High	High	Yes ☐
Low	Low °F	Low	Low	No ☐
Note A	Note B	Test Note A	Note D	Note D

Sec. III

A. 1986 quantity hazardous waste generated Instruction Page 20: 30258

B. 1987 quantity hazardous waste generated Page 20: 9829

C. UOM Page 21: P

D. Density Page 21: NA ☐ lbs/gal ☐ kg

E. Quantity hazardous waste on site on January 1, 1987 Page 21: 0

F. Quantity hazardous waste remaining on site on December 31, 1987 Page 21: 0

Sec. IV

A. EPA ID No. of facility to which waste was shipped Instruction Page 22	B. Number of shipments Page 22	C. Transport mode Page 22	D. Off-site T/S/O/R code Page 22	E. Total quantity shipped Page 22
A L D 0 0 0 6 2 2 4 6 4	6	H	M50 NA	5899

Comments: SEE SECTION IV BOX A CONTINUED ON SUPPLEMTAL PAGES.

BEFORE COPYING FORM, ATTACH SITE IDENTIFICATION LABEL OR ENTER:

SITE NAME

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1987 Hazardous Waste Report and Shipment Report

FORM **GS**

WASTE GENERATION AND SHIPMENT

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☐ Mark [X] if you are not required to complete Form GS.

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Complete Sections I through IV. Throughout this form enter "UK" if the information requested is not known or is not available; enter "NA" if the information requested is not applicable.

Sec. I A. Waste description Instructions Page 12

B. EPA hazardous waste code Page 13

C. State hazardous waste code Page 13

D. BID code Page 13

E. Source code Page 13

F. Waste form code Page 13

G. Waste minimization code Page 13

Sec. II A. Cyanides Instructions Page 14 — High ☐ Low ☐ Test ☐ Note ☐

B. Water Page 15 — High ☐ Low ☐ Note ☐

C. Total Solids Page 15 — High ☐ Low ☐ Note ☐

D. Suspended Solids Page 15 — High ☐ Low ☐ Note ☐

E. BTU Page 15 — High ☐ Low ☐ UOM ☐ Note ☐

F. Toxic Metals Page 15 — None ☐

	Metal	High	Low	Test
1.	☐	☐	☐	☐
2.	☐	☐	☐	☐
3.	☐	☐	☐	☐
4.	☐	☐	☐	☐
5.	☐	☐	☐	☐
6.	☐	☐	☐	☐

G. pH Page 16 — High ☐ Low ☐ None ☐

H. Radioactivity Page 16 — High ☐ % Low ☐ % Note ☐

I. Cyanides Page 16 — High ☐ Low ☐ Test ☐ None ☐

J. Halogens Page 20 — High ☐ Low ☐ None ☐

K. Flammability Page 20 — Yes ☐ No ☐ None ☐

Sec. III A. 1987 quantity hazardous waste generated Instructions Page 20

B. 1987 quantity hazardous waste generated Page 20

C. UOM Page 21

D. Density Page 21 — ☐ lbs/gal ☐ kg

E. Quantity hazardous waste on site on January 1, 1987 Page 21

F. Quantity hazardous waste remaining on site on December 31, 1987 Page 21

Sec. IV A. EPA ID No. of facility to which waste was shipped Instructions Page 22 — NYD049836779

B. Number of shipments Page 22 — 2

C. Transport mode Page 22 — H

D. Off-site T/S/D/R code Page 22 — M50 NA

E. Total quantity shipped Page 22 — 2554

Comments:

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SITE NAME

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US COAST GUARD YARD
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1987 Hazardous Waste Report and Shipment Report

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Sec. I A. Waste description Instructions Page 12

B. EPA hazardous waste code Page 12

C. State hazardous waste code Page 13

D. DOT code Page 13 | E. Process code Page 13 | F. Waste form code Page 13 | G. Waste reclamation code Page 13

Sec. II

A. Cyanides Instructions Page 14	B. Water Page 15	C. Total Solids Page 15	D. Suspended Solids Page 15	E. BTU Page 16	F. Trace Metals Page 16
High ☐ Low ☐ Trace ☐ Waste ☐	High ☐ Low ☐ None ☐	High ☐ Low ☐ None ☐	High ☐ Low ☐ None ☐	High ☐ Low ☐ UDM ☐ None ☐	None ☐ Metal ☐ High ☐ Low ☐ Trace ☐ 1. ☐ 2. ☐ 3. ☐ 4. ☐ 5. ☐ 6. ☐

G. pH Page 16	H. Flashpoint Page 16	I. Cyanides Page 16	J. Halogens Page 20	K. Radioactive Page 20
High ☐ Low ☐ None ☐	High ☐ °F Low ☐ °F None ☐	High ☐ Low ☐ Trace ☐ None ☐	High ☐ Low ☐ None ☐	Yes ☐ No ☐ None ☐

Sec. III A. 1987 quantity hazardous waste generated Instructions Page 20

B. 1987 quantity hazardous waste generated Page 20

C. UOM Page 21

D. Density Page 21 . ☐ lbs/gal ☐ kg

E. Quantity hazardous waste on site on January 1, 1987 Page 21

F. Quantity hazardous waste remaining on site on December 31, 1987 Page 21

Sec. IV

A. EPA ID No. of facility to which waste was shipped Instructions Page 22	B. Number of shipments Page 22	C. Transport mode Page 22	D. Off-site T/S/D/R code Page 22	E. Total quantity shipped Page 22
PAD064035819	1	W	M50 NA	1376

Comments:

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ATTN: Ed Warble

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1987 Hazardous Waste Report and Shipment Report

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Complete Sections I through IV. Throughout this form enter "DK" if the information requested is not known or is not available; enter "NA" if the information requested is not applicable.

Sec. I

A. Waste description (Instruction Page 12): FLAMMABLE SEALING COMPOUNDS USED IN SHIP REPAIR FUNCTIONS.

B. EPA hazardous waste code (Page 12): D001 | NA | NA | NA

C. State hazardous waste code (Page 12): | | NA | NA | NA

D. SIC code (Page 13): 3731

E. Source code (Page 13): 10

F. Waste form code (Page 13): H81

G. Waste minimization results (Page 14): B

Sec. II

	A. Organics (Instruction Page 14)	B. Water (Page 15)	C. Total Solids (Page 15)	D. Suspended Solids (Page 15)	E. BTU (Page 16)
High					
Low					
Test / UOM					
Note	D	D	D	D	D

F. Toxic Metals (Page 16) Note: B

Metal	High	Low	Test
1.			
2.			
3.			
4.			
5.			
6.			

G. pH (Page 16)	H. Flashpoint (Page 16)	I. Cyanides (Page 16)	J. Halogens (Page 20)	K. Radioactive (Page 20)
High	High °F	High	High	Yes ☐
Low	Low °F	Low	Low	No ☐
Note: A	Note: B	Test / Note: A	Note: D	Note: N

Sec. III

A. 1986 quantity hazardous waste generated (Instruction Page 20): 0

B. 1987 quantity hazardous waste generated (Page 20): 300

C. UOM (Page 21): P

D. Density (Page 21): NA ☐ lbs/gal ☐ kg

E. Quantity hazardous waste on site on January 1, 1987 (Page 21): 0

F. Quantity hazardous waste remaining on site on December 31, 1987 (Page 21): 0

Sec. IV

A. EPA ID No. of facility to which waste was shipped (Instruction Page 22)	B. Number of shipments (Page 22)	C. Transport mode (Page 22)	D. Off-site T/S/D/R code (Page 22)	E. Total quantity shipped (Page 22)
AL D03062246 4	1	H	M50 / NA	300

Comments:

BEFORE COPYING FORM, ATTACH SITE IDENTIFICATION LABEL OR ENTER:

SITE NAME

MD4690307844
US COAST GUARD YARD
HAWKINS POINT RD
BALTIMORE MD 21226
ATTN: Ed Warble

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1987 Hazardous Waste Report and Shipment Report

FORM GS

WASTE GENERATION AND SHIPMENT

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Complete Sections I through IV. Throughout this form enter "DK" if the information requested is not known or is not available; enter "NA" if the information requested is not applicable.

Sec. I — A. Waste description (Instructions Page 12)

CONTAMINATED WASTE OIL USED IN SHIPS MACHINERY.

B. EPA hazardous waste code (Page 12): D008 | NA | NA | NA

C. State hazardous waste code (Page 13): NA | NA | NA

D. SIC code (Page 13): 3731

E. Source code (Page 13): 10

F. Waste form code (Page 13): H83

G. Waste minimization code (Page 13): B

Sec. II

A. Ignitable (Page 14)	B. Water (Page 15)	C. Total Solids (Page 15)	D. Suspended Solids (Page 15)	E. BTU (Page 16)
High	High	High	High	High
Low	Low	Low	Low	Low
Test / Note D	Note D	Note D	Note D	UOM / Note D

F. Toxic Metals (Page 16) — Note C

	Metal	High	Low	Trace
1.	PB	T		A
2.	NA			
3.	NA			
4.	NA			
5.	NA			
6.	NA			

G. pH (Page 16)	H. Flashpoint (Page 16)	I. Cyanides (Page 18)	J. Halogens (Page 20)	K. Radioactive (Page 20)
High	High °F	High	High	Yes
Low	Low °F	Low	Low	No
Note	Note	Test / Note	Note	Items

Sec. III

A. 1988 quantity hazardous waste generated (Instruction Page 20)	B. 1987 quantity hazardous waste generated (Page 20)	C. UOM (Page 21)	D. Density (Page 21)
25307	7000	P	NA ☐ lbs/gal ☐ kg

E. Quantity hazardous waste on site on January 1, 1987 (Page 21)	F. Quantity hazardous waste remaining on site on December 31, 1987 (Page 21)
0	0

Sec. IV

A. EPA ID No. of facility to which waste was shipped (Instructions Page 22)	B. Number of shipments (Page 22)	C. Transport mode (Page 22)	D. Off-site T/S/D/R code (Page 22)	E. Total quantity shipped (Page 22)
ALD000622464	1	H	M50 / NA	7000

Comments:

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SITE NAME

MD4690307844
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HAWKINS POINT RD
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1987 Hazardous Waste Report and Shipment Report

FORM GS

WASTE GENERATION AND SHIPMENT

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Complete Sections I through IV. Throughout this form enter "DK" if the information requested is not known or is not available; enter "NA" if the information requested is not applicable.

Sec. I

A. Waste description (Instructions Page 12)

WASTE SOLVENT CAULK USED IN SHIP CONSTRUCTION.

B. EPA hazardous waste code (Page 12)

F 0 0 1 | N A | N A | N A

C. State hazardous waste code (Page 12)

N A | N A | N A

D. RIC code (Page 13): 3 7 3 1

E. Source code (Page 13): 2 2

F. Waste form code (Page 13): N 8 4

G. Waste minimization code (Page 14): B

Sec. II

A. Cyanide (Instructions Page 14)	B. Water (Page 14)	C. Total Solids (Page 15)	D. Suspended Solids (Page 15)	E. BTU (Page 16)	F. Toxic Metals (Page 16) Note: A
High ☐ Low ☐ Test ☐ Note D	High ☐ Low ☐ Note D	High ☐ Low ☐ Note D	High ☐ Low ☐ Note D	High ☐ Low ☐ UOM ☐ Note D	Metal: 1. ☐ 2. ☐ 3. ☐ 4. ☐ 5. ☐ 6. ☐ 7. ☐ 8. ☐ — High ☐ Low ☐ Test ☐

G. pH (Page 16)	H. Flashpoint (Page 16)	I. Cyanides (Page 19)	J. Halogens (Page 20)	K. Reflammable (Page 20)
High ☐ Low ☐ Note A	High ☐ °F Low ☐ °F Note A	High ☐ Low ☐ Test ☐ Note A	High ☐ Low ☐ Note D	Yes ☐ No ☐ Note N

Sec. III

A. 1988 quantity hazardous waste generated (Instructions Page 20): 0

B. 1987 quantity hazardous waste generated (Page 20): 6 0 0

C. UOM (Page 21): P

D. Density (Page 21): N A ☐ lbs/gal ☐ kg

E. Quantity hazardous waste on site on January 1, 1987 (Page 21): 0

F. Quantity hazardous waste remaining on site on December 31, 1987 (Page 21): 0

Sec. IV

A. EPA ID No. of facility to which waste was shipped (Instructions Page 22)	B. Number of shipments (Page 22)	C. Transport mode (Page 22)	D. Off-site T/S/D/R code (Page 22)	E. Total quantity shipped (Page 22)
A L D 0 0 0 1 6 2 2 4 6 4	1	A	M 1 0 | N A	6 0 0

Comments:

BEFORE COPYING FORM, ATTACH SITE IDENTIFICATION LABEL OR ENTER:

SITE NAME

MD4690307844
US COAST GUARD YARD
HAWKINS POINT RD
BALTIMORE MD 21226
ATTN: Ed Warble

FORM **GS**

MARYLAND HAZARDOUS AND SOLID WASTE MANAGEMENT ADMINISTRATION

1987 Hazardous Waste Report and Shipment Report

WASTE GENERATION AND SHIPMENT

WHO MUST COMPLETE THIS FORM? Form GS must be completed by every site that generated hazardous waste on site or shipped hazardous waste off site during 1987.

☐ Mark ☒ if you are not required to complete Form GS.

INSTRUCTIONS: Please read the detailed instructions beginning on page 12 of the 1987 Hazardous Waste Generation and Shipment Report Instructions booklet before completing this form.

Make and complete a photocopy of this form for each hazardous waste generated on site or shipped off site during 1987.

Complete Sections I through IV. Throughout this form enter "DK" if the information requested is not known or is not available; enter "NA" if the information requested is not applicable.

Sec. I

A. Waste description (Instructions Page 12): WASTE BERIUM OXIDE, SPENT OBA CANNISTERS POR SELF CONTAINED BREATHING APPARATUS.

B. EPA hazardous waste code (Page 12): D003 D005 NA NA

C. State hazardous waste code (Page 13): NA NA NA

D. SIC code (Page 13): 3731

E. Source code (Page 13): 10

F. Waste form code (Page 13): DK

G. Waste minimization results (Page 14): B

Sec. II

A. Organics (Instructions Page 14): High ☐ Low ☐ Trace ☐ Note D

B. Water (Page 15): High ☐ Low ☐ Note D

C. Total Solids (Page 15): High ☐ Low ☐ Note D

D. Suspended Solids (Page 15): High ☐ Low ☐ Note D

E. BTU (Page 16): High ☐ Low ☐ UOM ☐ Note D

F. Trace Metals (Page 16): None D

	Metal	High	Low	Trace
1.	BA	☐	☐	T
2.	NA	☐	☐	☐
3.	NA	☐	☐	☐
4.	NA	☐	☐	☐
5.	NA	☐	☐	☐
6.	NA	☐	☐	☐

G. pH (Page 16): High ☐ Low ☐ Note A

H. Flashpoint (Page 16): High ☐ °F Low ☐ °F Note A

I. Cyanides (Page 16): High ☐ Low ☐ Trace A Note ☐

J. Halogens (Page 20): High ☐ Low ☐ None N

K. Radioactive (Page 20): Yes ☐ No ☐ Note D

Sec. III

A. 1986 quantity hazardous waste generated (Instructions Page 20): 70

B. 1987 quantity hazardous waste generated (Page 20): 400

C. UOM (Page 21): P

D. Density (Page 21): 1.10 ☐ lbs/gal ☒ kg

E. Quantity hazardous waste on site on January 1, 1987 (Page 21): 0

F. Quantity hazardous waste remaining on site on December 31, 1987 (Page 21): 0

Sec. IV

A. EPA ID No. of facility to which waste was shipped (Instructions Page 24): ALD000624644

B. Number of shipments (Page 25): 2

C. Transport mode (Page 25): H

D. Off-site T/S/D/R code (Page 25): S01 NA

E. Total quantity shipped (Page 25): 340

Comments: SEE SECTION IV BOX A CONTINUED ON SUPPLEMENTAL PAGE.

BEFORE COPYING FORM, ATTACH SITE IDENTIFICATION LABEL OR ENTER:

SITE NAME

MD4690307844
US COAST GUARD YARD
HAWKING POINT RD
BALTIMORE MD 21226
ATTN: Ed Warble

FORM
GS

MARYLAND HAZARDOUS AND SOLID WASTE MANAGEMENT ADMINISTRATION

1987 Hazardous Waste Report and Shipment Report

WASTE GENERATION AND SHIPMENT

WHO MUST COMPLETE THIS FORM? Form GS must be completed by every site that generated hazardous waste on site or shipped hazardous waste off site during 1987.

☐ Mark ☒ if you are not required to complete Form GS.

INSTRUCTIONS: Please read the detailed instructions beginning on page 12 of the 1987 Hazardous Waste Generation and Shipment Report instructions booklet before completing this form.

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Sec. I A. Waste description Instructions Page 12

B. EPA hazardous waste code Page 12

C. State hazardous waste code Page 13

D. SIC code Page 13

E. Source code Page 13

F. Waste form code Page 13

G. Waste minimization code Page 14

Sec. II

A. Cyanide Instructions Page 14 — High ☐ Low ☐ Trace ☐ Mode ☐

B. Metal Page 14 — High ☐ Low ☐ Mode ☐

C. Total Solids Page 15 — High ☐ Low ☐ Mode ☐

D. Suspended Solids Page 15 — High ☐ Low ☐ Mode ☐

E. BTU Page 16 — High ☐ Low ☐ UOM ☐ Mode ☐

F. Toxic Metals Page 16 — Mode ☐

	Metal	High	Low	Trace
1.	☐	☐	☐	☐
2.	☐	☐	☐	☐
3.	☐	☐	☐	☐
4.	☐	☐	☐	☐
5.	☐	☐	☐	☐
6.	☐	☐	☐	☐

G. pH Page 16 — High ☐ Low ☐ Mode ☐

H. Flashpoint Page 16 — High ☐ °F Low ☐ °F Mode ☐

I. Cyanides Page 16 — High ☐ Low ☐ Trace ☐ Mode ☐

J. Halogens Page 20 — High ☐ Low ☐ None ☐

K. Pesticides Page 20 — Yes ☐ No ☐ Mode ☐

Sec. III

A. 1987 quantity hazardous waste generated Instructions Page 20

B. 1987 quantity hazardous waste generated Page 20

C. UOM Page 21

D. Density Page 21 — ☐ lbs/gal ☐ kg

E. Quantity hazardous waste on site on January 1, 1987 Page 21

F. Quantity hazardous waste remaining on site on December 31, 1987 Page 21

Sec. IV

A. EPA ID No. of facility to which waste was shipped Instructions Page 22 — I L D 0 9 8 6 4 2 4 2 4

B. Number of shipments Page 22 — 1

C. Transport mode Page 22 — H

D. Off-site T/S/D/R code Page 22 — S 0 1 N A

E. Total quantity shipped Page 22 — 6 0

Comments:

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Sec. I — A. Waste description (Instructions Page 12)

CORROSIVE BLEACH USED IN METAL SURFACE PREPARATION.

B. EPA hazardous waste code (Page 12): D002 D007 NA NA

C. State hazardous waste code (Page 12): NA NA NA

D. SIC code (Page 12): 3731

E. Process code (Page 13): 22

F. Waste form code (Page 14): H20

G. Waste minimization results (Page 15): E

Sec. II

	A. Ogarnic (Page 14)	B. Water (Page 15)	C. Total Solids (Page 16)	D. Suspended Solids (Page 16)	E. BTU (Page 16)	F. Toxic Metals (Page 17) Note: C
						Mercury / High / Low / Total
High		G				1. X / P / / T
Low						2. NA / / /
Total / Note	D		D	D	D	3. NA / / /
						4. NA / / /
						5. NA / / /
						6. NA / / /

	G. pH (Page 16)	H. Flashpoint (Page 16)	I. Cyanides (Page 17)	J. Halogens (Page 17)	K. Radioactive (Page 17)
High		°F			Yes ☐
Low		°F			No ☐
Note	E	A	A	N	N

Sec. III

A. 1986 quantity hazardous waste generated (Instructions Page 20)	B. 1987 quantity hazardous waste generated (Page 20)	C. UOM (Page 21)	D. Density (Page 21)
0	37	G	9.8 ☐ lbs/gal ☒ kg

E. Quantity hazardous waste on site on January 1, 1987 (Page 21)	F. Quantity hazardous waste remaining on site on December 31, 1987 (Page 21)
0	0

Sec. IV

A. EPA ID No. of facility to which waste was shipped (Instructions Page 22)	B. Number of shipments (Page 22)	C. Transport mode (Page 22)	D. Off-site T/S/D/R code (Page 22)	E. Total quantity shipped (Page 22)
ALD000622246 4	1	H	M10 NA	37

Comments:

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1987 Hazardous Waste Report and Shipment Report

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Sec. I

A. Waste description (Instructions Page 10): CORROSIVE LIQUID AND RINSE WATER USED IN METAL SURFACE PREPARATION.

B. EPA hazardous waste code (Page 13): D002 | NA | NA | NA

C. State hazardous waste code (Page 13): NA | NA | NA

D. SIC code (Page 13): 3731

E. Source code (Page 13): 10

F. Waste form code (Page 13): H20

G. Waste minimization code (Page 14): B

Sec. II

	A. Ignitable (Page 14)	B. Water (Page 15)	C. Total Solids (Page 15)	D. Suspended Solids (Page 15)	E. BTU (Page 15)	F. Toxic Metals (Page 15) Note: A
	High / Low / Test / Note: D	High / Low / Note: D	High / Low / Note: D	High / Low / Note: D	High / Low / UOM / Note: N	Metals: 1. 2. 3. 4. 5. 6. 7.

F. Toxic Metals (Page 15) Note: A

Metals	High	Low	Test
1.			
2.			
3.			
4.			
5.			
6.			
7.			

G. pH (Page 15)	H. Flashpoint (Page 15)	I. Cyanides (Page 15)	J. Halogens (Page 20)	K. Radioactive (Page 20)
High: 4.5	High: °F	High:	High:	Yes:
Low: 10.0	Low: °F	Low:	Low:	No:
Note:	Note: B	Test: / Note: A	Note: N	Note: N

Sec. III

A. 1988 quantity hazardous waste generated (Instructions Page 20)	B. 1987 quantity hazardous waste generated (Page 20)	C. UOM (Page 21)	D. Density (Page 21)
7728	8905	G	9.8 ☐ lbs/gal ☒ kg

E. Quantity hazardous waste on site on January 1, 1987 (Page 21)	F. Quantity hazardous waste remaining on site on December 31, 1987 (Page 21)
0	0

Sec. IV

A. EPA ID No. of facility to which waste was shipped (Instructions Page 20)	B. Number of shipments (Page 20)	C. Transport mode (Page 20)	D. Off-site T/S/D/R code (Page 20)	E. Total quantity shipped (Page 20)
MDD980555188	7	H	M82 / NA	8868

Comments: SEE SECTION IV BOX A CONTINUED ON SUPPLEMENTAL PAGE.

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Sec. I A. Waste description

B. EPA hazardous waste code

C. State hazardous waste code

D. ISO code

E. Shakes code

F. Waste form code

G. Waste minimization code

Sec. II A. Cyanides | B. Metals | C. Total Solids | D. Suspended Solids | E. BTU | F. Trade Metals

G. pH | H. Flashpoint | I. Cyanides | J. Halogens | K. Pesticides

Sec. III A. 1986 quantity hazardous waste generated | B. 1987 quantity hazardous waste generated | C. UOM | D. Density

E. Quantity hazardous waste on site on January 1, 1987

F. Quantity hazardous waste remaining on site on December 31, 1987

Sec. IV A. EPA ID No. of facility to which waste was shipped | B. Number of shipments | C. Transport mode | D. Off-site T/S/D/R code | E. Total quantity shipped

A. EPA ID No.	B. Number of shipments	C. Transport mode	D. Off-site T/S/D/R code	E. Total quantity shipped
NYD049836679	2	H	D02 NA	37

Comments:

BEFORE COPYING FORM, ATTACH SITE IDENTIFICATION LABEL OR ENTER:

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FORM GS

MARYLAND HAZARDOUS AND SOLID WASTE MANAGEMENT ADMINISTRATION

1987 Hazardous Waste Report and Shipment Report

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Sec. I

A. Waste description Instructions Page 12: RUST INHIBITOR AND ANTIFREEZE CONTAINING ZINC CHROMATE; USED IN SHIPS MAIN ENGINES.

B. EPA hazardous waste code Page 13: D007 | NA | NA | NA

C. State hazardous waste code Page 13: NA | NA | NA

D. RCI code Page 13: 3731

E. Source code Page 14: 10

F. Waste form code Page 15: H48

G. Waste minimization code Page 16: B

Sec. II

	A. Ignitable Instructions Page 14	B. Water Page 16	C. Total Solids Page 16	D. Suspended Solids Page 16	E. BTU Page 16	F. Toxic Metals Page 16 — Note: D			
							High	Low	Test
High		High	High	High	High				
Low		Low	Low	Low	Low				
Test / Note	D	Note D	Note D	Note D	UCM / Note N	1. Metal HgX			
						2. NA			
						3. NA			
						4. NA			
						5. NA			
						6. NA			

	G. pH Page 16	H. Flashpoint Page 16	I. Cyanides Page 19	J. Halogens Page 20	K. Radioactive Page 20
High		High °F	High	High	Yes ☐
Low		Low °F	Low	Low	No ☐
Note	A	Note A	Test / Note A	Note N	Note N

Sec. III

A. 1986 quantity hazardous waste generated Instruction Page 20: 3076

B. 1987 quantity hazardous waste generated Page 20: 6476

C. UCM Page 21: G

D. Density Page 21: 10 ☐ lbs/gal ☒ kg

E. Quantity hazardous waste on site on January 1, 1987 Page 21: 0

F. Quantity hazardous waste remaining on site on December 31, 1987 Page 21: 0

Sec. IV

A. EPA ID No. of facility to which waste was shipped Instruction Page 22	B. Number of shipments Page 22	C. Transport mode Page 22	D. Off-site T/S/D/R code Page 22	E. Total quantity shipped Page 22
MDD980551888	7	H	DK / DK	6184

Comments: SEE SECTION IV BOX A CONTINUED ON SUPPLEMENTAL PAGE.

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Sec. I A. Waste description Instructions Page 12

B. EPA hazardous waste code Page 12

C. State hazardous waste code Page 13

D. RCRA code Page 13

E. Source code Page 13

F. Waste form code Page 13

G. Waste minimization source code Page 13

Sec. II A. Cyanides Instructions Page 14 — High / Low / Total / Note

B. Metals Page 15 — High / Low / Note

C. Total Solids Page 15 — High / Low / None

D. Suspended Solids Page 15 — High / Low / Note

E. BTU Page 15 — High / Low / UOM / Note

F. Toxic Metals Page 15 — None ☐

	Silver	High	Low	Total
1.				
2.				
3.				
4.				
5.				
6.				

G. pH Page 16 — High / Low / Note

H. Flashpoint Page 16 — High / Low / Note (°F)

I. Cyanides Page 16 — High / Low / Total / None

J. Halogens Page 16 — High / Low / Note

K. Radioactive Page 16 — Yes ☐ / No ☐ / None

Sec. III A. 1987 quantity hazardous waste generated Instructions Page 20

B. 1987 quantity hazardous waste generated Page 20

C. UOM Page 21

D. Density Page 21 — ____ = ____ ☐ lbs/gal ☐ kg

E. Quantity hazardous waste on site on January 1, 1987 Page 21

F. Quantity hazardous waste remaining on site on December 31, 1987 Page 21

Sec. IV A. EPA ID No. of facility to which waste was shipped Instructions Page 22 — A I D 0 0 0 6 2 2 4 6 4

B. Number of shipments Page 22 — 1

C. Transport mode Page 22 — H

D. Off-site TSD/D/O/R waste Page 22 — D K / D K

E. Total quantity shipped Page 22 — 2 9 2

Comments:

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Sec. I — A. Waste description (Instructions Page 12): USED TRANSFORMER OIL CONTAINING PCB'S.

B. EPA hazardous waste code (Page 12)				C. State hazardous waste code (Page 13)			
N A	N A	N A	N A	M 0 0 1			

D. RC code (Page 13)	E. Source code (Page 13)	F. Waste form code (Page 13)	G. Waste minimization code (Page 14)
3 7 3 1	1 0	H 7 2	B

Sec. II

A. Ignitable (Instructions Page 14)	B. Water (Page 15)	C. Total Solids (Page 14)	D. Suspended Solids (Page 15)	E. BTU (Page 16)	F. Toxic Metals (Page 16) — Note: ☐
High ☐ Low ☐ Test ☐ Note D	High ☐ Low ☐ Note D	High ☐ Low ☐ Note D	High ☐ Low ☐ Note D	High ☐ Low ☐ UOM ☐ Note D	Metal / High / Low / Test 1. ☐ ☐ ☐ ☐ 2. ☐ ☐ ☐ ☐ 3. ☐ ☐ ☐ ☐ 4. ☐ ☐ ☐ ☐ 5. ☐ ☐ ☐ ☐ 6. ☐ ☐ ☐ ☐

G. pH (Page 16)	H. Flashpoint (Page 17)	I. Cyanides (Page 18)	J. Halogens (Page 20)	K. Radioactive (Page 20)
High ☐ Low ☐ Note A	High ☐ °F Low ☐ °F Note A	High ☐ Low ☐ Test ☐ Note A	High ☐ Low ☐ Note A	Yes ☐ No ☐ Note A

Sec. III

A. 1986 quantity hazardous waste generated (Instructions Page 20)	B. 1987 quantity hazardous waste generated (Page 20)	C. UOM (Page 21)	D. Density (Page 21)
N A	3 4 1 2	P	N A ☐ lbs/gal ☐ kg

E. Quantity hazardous waste on site on January 1, 1987 (Page 21)	F. Quantity hazardous waste remaining on site on December 31, 1987 (Page 21)
0	0

Sec. IV

A. EPA ID No. of facility to which waste was shipped (Instructions Page 22)	B. Number of shipments (Page 22)	C. Transport mode (Page 22)	D. Off-site T/S/D/R code (Page 22)	E. Total quantity shipped (Page 22)
M D 9 8 0 9 7 3 5 5 6	1	H	M 7 2	N A	1 6 9 4

Comments:

SEE IV BOX A CONTINUED ON SUPPLEMENTAL PAGE.

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Sec. I A. Waste description (see instructions Page 12)

B. EPA hazardous waste code Page 12

C. State hazardous waste code Page 13

D. RCRA code Page 14

E. Source code Page 15

F. Waste form code Page 15

G. Waste minimization code Page 15

Sec. II

A. Organics (see instructions Page 14)	B. Water Page 15	C. Total Solids Page 16	D. Suspended Solids Page 16	E. BTU Page 16
High ☐	High ☐	High ☐	High ☐	High ☐
Low ☐	Low ☐	Low ☐	Low ☐	Low ☐
Trace ☐ None ☐	Solids ☐	None ☐	None ☐	UCM ☐ Solids ☐

F. Toxic Metals Page 16 — Solids ☐ Liquids ☐

	High	Low	Trace
1.	☐	☐	☐
2.	☐	☐	☐
3.	☐	☐	☐
4.	☐	☐	☐
5.	☐	☐	☐
6.	☐	☐	☐

G. pH Page 16	H. Radioactivity Page 16	I. Cyanides Page 16	J. Halogens Page 16	K. Radioactive Page 16
High ☐	High ☐ ^{90}Sr	High ☐	High ☐	Yes ☐
Low ☐	Low ☐ ^{137}Cs	Low ☐	Low ☐	No ☐
None ☐	Solids ☐	Trace ☐ None ☐	None ☐	None ☐

Sec. III

A. 1986 quantity hazardous waste generated (see instructions Page 20)

B. 1987 quantity hazardous waste generated Page 20

C. UOM Page 21

D. Density Page 21 ☐ lbs/gal ☐ kg

E. Quantity hazardous waste on site on January 1, 1987 Page 21

F. Quantity hazardous waste remaining on site on December 31, 1987 Page 21

Sec. IV

A. EPA ID No. of facility to which waste was shipped (see instructions Page 22)	B. Number of shipments Page 22	C. Transport mode Page 22	D. Off-site T/S/D/R code Page 23	E. Total quantity shipped Page 23
PAD983113749	1	H	DK	1718

Comments:

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Sec. I

A. Waste description (Instruction Page 12): CORROSIVE SPENT ALKALINE BATTERIES CONTAINING POTASIUM HYDROXIDE USE IN AIDS TO NAVIGATION BUOYS; ELECTROLYTE HIGH IN MERCURY.

B. EPA hazardous waste code (Page 12)	C. State hazardous waste code (Page 12)
D002 D009 NA NA	NA NA NA

D. SIC code (Page 13)	E. Source code (Page 13)	F. Waste form code (Page 13)	G. Waste minimization code (Page 13)
4499	10	H30	B

Sec. II

A. Organics (Instruction Page 14)	B. Water (Page 15)	C. Total Solids (Page 15)	D. Suspended Solids (Page 15)	E. BTU (Page 16)	F. Toxic Metals (Page 16) Note: C
High ☐ Low ☐ Trace ☐ Note N	High ☐ Low ☐ Note D	High ☐ Low ☐ Note D	High ☐ Low ☐ Note D	High ☐ Low ☐ UOM ☐ Note N	Metal: 1. HS; 2. NA; 3. NA; 4. NA; 5. NA; 6. NA; 7. NA; 8. NA. High / Low / Trace ☐

G. pH (Page 16)	H. Pesticides (Page 16)	I. Cyanides (Page 16)	J. Halogens (Page 20)	K. Radioactive (Page 20)
High 13.5 Low 12.7 Note ☐	High ☐ % Low ☐ % Note G	High ☐ Low ☐ Trace ☐ Note A	High ☐ Low ☐ Note N	Yes ☐ No ☐ Note N

Sec. III

A. 1986 quantity hazardous waste generated (Instruction Page 20)	B. 1987 quantity hazardous waste generated (Page 20)	C. UOM (Page 21)	D. Density (Page 21)
49269	79563	P	NA ☐ lbs/gal ☐ kg

E. Quantity hazardous waste on site on January 1, 1987 (Page 21)	F. Quantity hazardous waste remaining on site on December 31, 1987 (Page 21)
95844	0

Sec. IV

A. EPA ID No. of facility to which waste was shipped (Instruction Page 22)	B. Number of shipments (Page 22)	C. Transport mode (Page 22)	D. Off-site T/S/D/R code (Page 22)	E. Total quantity shipped (Page 22)
NYD049836679	09	H	M72 NA	69055

Comments:

SEE IV BOX A CONTINUED ON SUPPLEMENTAL PAGE

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FORM GS

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1987 Hazardous Waste Report and Shipment Report

WASTE GENERATION AND SHIPMENT

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Sec. I

A. Waste description Instruction Page 12

B. EPA hazardous waste code Page 12

C. State hazardous waste code Page 13

D. SIC code Page 13

E. Source code Page 13

F. Waste form code Page 13

G. Waste minimization results Page 13

Sec. II

A. Organics Instruction Page 14 — High / Low / Test / Note

B. Water Page 15 — High / Low / Note

C. Total Solids Page 16 — High / Low / Note

D. Suspended Solids Page 16 — High / Low / Note

E. BTU Page 17 — High / Low / UOM / Note

F. Toxic Metals Page 18 — Note

Metal	High	Low	Test
1.			
2.			
3.			
4.			
5.			
6.			

G. pH Page 18 — High / Low / Note

H. Flashpoint Page 18 — High °F / Low °F / Note

I. Cyanides Page 19 — High / Low / Test / Note

J. Halogens Page 20 — High / Low / Note

K. Radioactive Page 20 — Yes / No / Note

Sec. III

A. 1986 quantity hazardous waste generated Instruction Page 20

B. 1987 quantity hazardous waste generated Page 20

C. UOM Page 21

D. Density Page 21 — ☐ lbs/gal ☐ kg

E. Quantity hazardous waste on site on January 1, 1987 Page 21

F. Quantity hazardous waste remaining on site on December 31, 1987 Page 21

Sec. IV

A. EPA ID No. of facility to which waste was shipped Instruction Page 22	B. Number of shipments Page 22	C. Transport mode Page 22	D. Off-site T/S/D/R code Page 22	E. Total quantity shipped Page 22
PAD085690592	03	H	M72 NA	10518

Comments:

BEFORE COPYING FORM, ATTACH SITE IDENTIFICATION LABEL OR ENTER:

SITE NAME

MD4690307844
US COAST GUARD YARD
HAWKINS POINT RD
BALTIMORE MD 21226
ATTN: Ed Warble

MARYLAND HAZARDOUS AND SOLID WASTE MANAGEMENT ADMINISTRATION

1987 Hazardous Waste Report and Shipment Report

FORM **GS**

WASTE GENERATION AND SHIPMENT

WHO MUST COMPLETE THIS FORM? Form GS must be completed by every site that generated hazardous waste on site or shipped hazardous waste off site during 1987.

☐ Mark ☒ if you are not required to complete Form GS.

INSTRUCTIONS: Please read the detailed instructions beginning on page 18 of the 1987 Hazardous Waste Generation and Shipment Report instructions booklet before completing this form.

Make and complete a photocopy of this form for each hazardous waste generated on site or shipped off site during 1987.

Complete Sections I through IV. Throughout this form enter "UK" if the information requested is not known or is not available; enter "NA" if the information requested is not applicable.

Sec. I — A. Waste description (Instructions Page 18): CORROSIVE MATERIAL USED IN CLEANING PIPING SYSTEMS - ALKALINE.

B. EPA hazardous waste code (Page 19)	C. State hazardous waste code (Page 19)	D. SIC code (Page 19)	E. Source code (Page 19)	F. Waste form code (Page 19)	G. Waste minimization code (Page 19)
D002 NA NA NA	NA NA NA	3731	22	H30	B

Sec. II

A. Gravities (Instructions Page 14)	B. Water (Page 16)	C. Total Solids (Page 16)	D. Suspended Solids (Page 16)	E. BTU (Page 16)	F. Trace Metals (Page 16) Note: B
High / Low / Test / Note D	High / Low / Note D	High / Low / Note D	High / Low / Note D	High / Low / UOM / Note D	Mineral / High / Low / Test: 1. 2. 3. 4. 5. 6.

G. pH (Page 16)	H. Flashpoint (Page 16)	I. Cyanides (Page 16)	J. Halogens (Page 20)	K. Radioactive (Page 20)
High / Low / Note B	High / Low / °F / Note A	High / Low / Test / Note A	High / Low / Note D	Yes ☐ / No ☐ / Note D

Sec. III

A. 1986 quantity hazardous waste generated (Instructions Page 20)	B. 1987 quantity hazardous waste generated (Page 20)	C. UOM (Page 21)	D. Density (Page 21)
405	1180	P	NA ☐ lbs/gal ☐ kg

E. Quantity hazardous waste on site on January 1, 1987 (Page 21)	F. Quantity hazardous waste remaining on site on December 31, 1987 (Page 21)
0	0

Sec. IV

A. EPA ID No. of facility to which waste was shipped (Instructions Page 20)	B. Number of shipments (Page 20)	C. Transport mode (Page 20)	D. Off-site T/S/D/R code (Page 20)	E. Total quantity shipped (Page 20)
PAD085690592	1	H	M10 NA	1180

Comments:

BEFORE COPYING FORM, ATTACH SITE IDENTIFICATION LABEL OR ENTER:

SITE NAME

MD4690307844
US COAST GUARD YARD
HAWKINS POINT RD
BALTIMORE MD 21226
ATTN: Ed Warble

MARYLAND HAZARDOUS AND SOLID WASTE MANAGEMENT ADMINISTRATION

1987 Hazardous Waste Report and Shipment Report

FORM GS

WASTE GENERATION AND SHIPMENT

WHO MUST COMPLETE THIS FORM? Form GS must be completed by every site that generated hazardous waste on site or shipped hazardous waste off site during 1987.

☐ Mark ☒ if you are not required to complete Form GS.

INSTRUCTIONS: Please read the detailed instructions beginning on page 12 of the 1987 Hazardous Waste Generation and Shipment Report Instructions booklet before completing this form.

Make and complete a photocopy of this form for each hazardous waste generated on site or shipped off site during 1987.

Complete Sections I through IV. Throughout this form enter "DK" if the information requested is not known or is not available; enter "NA" if the information requested is not applicable.

Sec. I A. Waste description Instruction Page 12: LIQUID RESIN, POLYURETHANA USED IN PLASTIC BOAT SHOP - POISON B.

B. EPA hazardous waste code Page 12				C. State hazardous waste code Page 13			
X	9 4 0	NA	NA	NA	NA	NA	NA

D. DOT code Page 13	E. Volume code Page 13	F. Waste form code Page 13	G. Waste minimization code Page 13
3 7 3 1	2 2	N 8 4	B

Sec. II

A. Organics Instruction Page 14	B. Water Page 15	C. Total Solids Page 15	D. Suspended Solids Page 15	E. BTU Page 16	F. Toxic Metals Page 16 — Items: B
High / Low / Test / Note: D	High / Low / Note: D	High / Low / Note: D	High / Low / Note: D	High / Low / UOM / Items: D	Metal: 1. 2. 3. 4. 5. 6. — High / Low / Test

G. pH Page 16	H. Flashpoint Page 16	I. Cyanides Page 19	J. Halogens Page 20	K. Radioactive Page 20
High / Low / Note: A	High / Low °F / Note: A	High / Low / Test / Note: A	High / Low / Note: D	Yes ☐ / No ☐ / Note: D

Sec. III

A. 1986 quantity hazardous waste generated Instruction Page 20	B. 1987 quantity hazardous waste generated Page 20	C. UOM Page 21	D. Density Page 21
9 4	9 6	P	NA ☐ lbs/gal ☐ kg

E. Quantity hazardous waste on site on January 1, 1987 Page 21	F. Quantity hazardous waste remaining on site on December 31, 1987 Page 21
0	0

Sec. IV

A. EPA ID No. of facility to which waste was shipped Instruction Page 22	B. Number of shipments Page 22	C. Transport Mode Page 22	D. Off-site T/S/D/R code Page 22	E. Total quantity shipped Page 22
I L D 0 9 8 6 4 2 4 2 4	1	H	M 1 0	NA	9 6

Comments:

BEFORE COPYING FORM, ATTACH SITE IDENTIFICATION LABEL OR ENTER:

SITE NAME

MD4690307844
US COAST GUARD YARD
HAWKINS POINT RD
BALTIMORE MD 21226
ATTN: Ed Warble

FORM **GS**

MARYLAND HAZARDOUS AND SOLID WASTE MANAGEMENT ADMINISTRATION

1987 Hazardous Waste Report and Shipment Report

WASTE GENERATION AND SHIPMENT

WHO MUST COMPLETE THIS FORM? Form GS must be completed by every site that generated hazardous waste on site or shipped hazardous waste off site during 1987.

☐ Mark ☒ if you are not required to complete Form GS.

INSTRUCTIONS: Please read the detailed instructions beginning on page 12 of the 1987 Hazardous Waste Generation and Shipment Report instructions booklet before completing this form.

Make and complete a photocopy of this form for each hazardous waste generated on site or shipped off site during 1987.

Complete Sections I through IV. Throughout this form enter "DK" if the information requested is not known or is not available; enter "NA" if the information requested is not applicable.

Sec. I

A. Waste description (Instruction Page 16): CATALYST VEHICLE (RESIN) USED IN PLASTIC BOAT SHOP - POISON B.

B. EPA hazardous waste code (Page 16): X940, NA, NA, NA

C. State hazardous waste code (Page 16): NA, NA, NA

D. SIC code (Page 16): 3731

E. Source code (Page 16): 22

F. Waste form code (Page 16): N84

G. Waste subcategorization code (Page 16): B

Sec. II

A. Organics: Note D

B. Water: Note D

C. Total Solids: Note D

D. Suspended Solids: Note D

E. BTU: Note D

F. Toxic Metals: Form B

G. pH: Note A

H. Flashpoint: Note A

I. Cyanides: Note A

J. Halogens: Note D

K. Radioactive: Note D

Sec. III

A. 1986 quantity hazardous waste generated: 0

B. 1987 quantity hazardous waste generated: 71

C. UOM: P

D. Density: NA ☐ lbs/gal ☐ sg

E. Quantity hazardous waste on site on January 1, 1987: 0

F. Quantity hazardous waste remaining on site on December 31, 1987: 0

Sec. IV

A. EPA ID No. of facility to which waste was shipped: ILD098642424

B. Number of shipments: 1

C. Transport mode: H

D. Off-site T/S/D/R code: M10, NA

E. Total quantity shipped: 71

Comments:

BEFORE COPYING FORM, ATTACH SITE IDENTIFICATION LABEL OR ENTER:

SITE NAME

MD4690307844
US COAST GUARD YARD
HAWKINS POINT RD
BALTIMORE MD 21226
ATTN: Ed Warble

MARYLAND HAZARDOUS AND SOLID WASTE MANAGEMENT ADMINISTRATION

1987 Hazardous Waste Report and Shipment Report

FORM GS

WASTE GENERATION AND SHIPMENT

WHO MUST COMPLETE THIS FORM? Form GS must be completed by every site that generated hazardous waste on site or shipped hazardous waste off site during 1987.

☐ Mark ☒ if you are not required to complete Form GS.

INSTRUCTIONS: Please read the detailed instructions beginning on page 12 of the 1987 Hazardous Waste Generation and Shipment Report instructions booklet before completing this form.

Make and complete a photocopy of this form for each hazardous waste generated on site or shipped off site during 1987.

Complete Sections I through IV. Throughout this form enter "UK" if the information requested is not known or is not available; enter "NA" if the information requested is not applicable.

Sec. I

A. Waste description (Instruction Page 12): OUT OF DATE SODIUM HYDROXIDE - DISPOSED OF SINCE IT IS NO LONGER USED.

B. EPA hazardous waste code (Page 12): D002 | NA | NA | NA

C. State hazardous waste code (Page 12): NA | NA | NA

D. SIC code (Page 13): 3731

E. Waste code (Page 13): 22

F. Waste form code (Page 13): N88

G. Waste minimization source (Page 14): B

Sec. II

A. Organics (Page 14)	B. Water (Page 15)	C. Total Solids (Page 15)	D. Suspended Solids (Page 15)	E. BTU (Page 15)	F. Toxic Metals (Page 16) Item B
High ☐ Low ☐ Trace ☐ Note D	High ☐ Low ☐ Note D	High ☐ Low ☐ Note D	High ☐ Low ☐ Note D	High ☐ Low ☐ UOM ☐ Note D	Solid ☐ High ☐ Low ☐ Trace ☐

G. pH (Page 15)	H. Reactivity (Page 16)	I. Cyanides (Page 16)	J. Halogens (Page 16)	K. Radioactive (Page 16)
High ☐ Low ☐ Note A	High ☐ % Low ☐ % Note A	High ☐ Low ☐ Trace ☐ Note A	High ☐ Low ☐ Note D	Yes ☐ No ☐ Note D

F. Toxic Metals (Page 16) — Item B

	Solid	High	Low	Trace
1.	☐	☐	☐	☐
2.	☐	☐	☐	☐
3.	☐	☐	☐	☐
4.	☐	☐	☐	☐
5.	☐	☐	☐	☐
6.	☐	☐	☐	☐

Sec. III

A. Total quantity hazardous waste generated (Instruction Page 20): 0

B. 1987 quantity hazardous waste generated (Page 20): 100

C. UOM (Page 21): P

D. Density (Page 21): ☐ lbs/gal ☐ kg NA

E. Quantity hazardous waste on site on January 1, 1987 (Page 21): 0

F. Quantity hazardous waste remaining on site on December 31, 1987 (Page 21): 0

Sec. IV

A. EPA ID No. of facility to which waste was shipped (Instruction Page 22)	B. Number of shipments (Page 22)	C. Transport mode (Page 23)	D. Off-site T/S/D/R code (Page 23)	E. Total quantity shipped (Page 23)
PAD085690592	1	H	S01	100

Comments:

BEFORE COPYING FORM, ATTACH SITE IDENTIFICATION LABEL OR ENTER:

SITE NAME: U.S. COAST GUARD YARD

EPA ID NO.: MD469031078444

MARYLAND HAZARDOUS AND SOLID WASTE MANAGEMENT ADMINISTRATION

1987 Hazardous Waste Generation and Shipment Report

FORM 01

OFF-SITE IDENTIFICATION

WHO MUST COMPLETE THIS FORM? Form OI must be completed by every site that shipped hazardous waste off site and every site that received hazardous waste from off site during 1987.

☐ Mark [X] if you are not required to complete Form OI.

INSTRUCTIONS: Please read the detailed instructions beginning on page 23 of the 1987 Hazardous Waste Generation and Shipment Report Instructions booklet before completing this form.

Complete A through E for each off-site installation to which you shipped waste or from which you received waste during 1987.

Complete A through D for every transporter you used during the reporting year.

Throughout this form enter "DK" if the information requested is not known or is not available; enter "NA" if the information requested is not applicable. Make and complete additional copies of this form if you need to identify more than four off-site installations or transporters.

Site 1

A. EPA ID No. of off-site installation or transporter (Instruction page 23): PAD085690592

B. Name of off-site installation or transporter (Page 23): WASTE CONVERSION INC.

C. Site type code (Page 24): K

D. Site relationship code (Page 24): D

E. Address of off-site installation (Page 24): Street: 2869 SANDSTONE DRIVE; City: HATFIELD; State: PA; Zip Code: 19440-

Site 2

A. EPA ID No. of off-site installation or transporter (Instruction page 23): MDD981015551819

B. Name of off-site installation or transporter (Page 23): CHEM CLEAR OF BALTIMORE

C. Site type code (Page 24): F

D. Site relationship code (Page 24): D

E. Address of off-site installation (Page 24): Street: 1910 RUSSELL STREET; City: BALTIMORE; State: MD; Zip Code: 21230-

Site 3

A. EPA ID No. of off-site installation or transporter (Instruction page 23): MDD013103133106910

B. Name of off-site installation or transporter (Page 23): A & A WASTE OIL

C. Site type code (Page 24): T

D. Site relationship code (Page 24): D

E. Address of off-site installation (Page 24): Street: N/A; City: ; State: ; Zip Code: -

Site 4

A. EPA ID No. of off-site installation or transporter (Instruction page 23): MDD980927156

B. Name of off-site installation or transporter (Page 23): MARYLAND LIQUID WASTE

C. Site type code (Page 24): T

D. Site relationship code (Page 24): D

E. Address of off-site installation (Page 24): Street: N/A; City: ; State: ; Zip Code: -

Comments:

BEFORE COPYING FORM, ATTACH SITE IDENTIFICATION LABEL OR ENTER:

SITE NAME: U.S. COAST GUARD YARD

EPA ID NO.: MD4690130781414

MARYLAND HAZARDOUS AND SOLID WASTE MANAGEMENT ADMINISTRATION

1987 Hazardous Waste Generation and Shipment Report

FORM 01

OFF-SITE IDENTIFICATION

WHO MUST COMPLETE THIS FORM? Form OI must be completed by every site that shipped hazardous waste off site and every site that received hazardous waste from off site during 1987.

☐ Mark [X] if you are not required to complete Form OI.

INSTRUCTIONS: Please read the detailed instructions beginning on page 23 of the 1987 Hazardous Waste Generation and Shipment Report Instructions booklet before completing this form.

Complete A through E for each off-site installation to which you shipped waste or from which you received waste during 1987.

Complete A through D for every transporter you used during the reporting year.

Throughout this form enter "DK" if the information requested is not known or is not available; enter "NA" if the information requested is not applicable. Make and complete additional copies of this form if you need to identify more than four off-site installations or transporters.

Site 1

A. EPA ID No. of off-site installation or transporter (Instruction page 25): MDD081730316312

B. Name of off-site installation or transporter (Page 23): MORRISON ENVIRONMENTAL SERVICE

C. Site type code (Page 24): T

D. Site relationship code (Page 24): D

E. Address of off-site installation (Page 24): Street: N/A; City: ; State: ; Zip Code: -

Site 2

A. EPA ID No. of off-site installation or transporter (Instruction page 25): MOD980917355 16

B. Name of off-site installation or transporter (Page 23): ENVIRONMENTAL INT'L ELECTRICAL SERVICE, INC.

C. Site type code (Page 24): F

D. Site relationship code (Page 24): D

E. Address of off-site installation (Page 24): Street: 1220 WYOMING STREET; City: KANSAS CITY; State: MO; Zip Code: 64101-

Site 3

A. EPA ID No. of off-site installation or transporter (Instruction page 25): NYD091932831 95

B. Name of off-site installation or transporter (Page 23): CATARACT INDUSTRIAL WAREHOUSING

C. Site type code (Page 24): T

D. Site relationship code (Page 24): D

E. Address of off-site installation (Page 24): Street: N/A; City: ; State: ; Zip Code: -

Site 4

A. EPA ID No. of off-site installation or transporter (Instruction page 25): PAD981111137 49

B. Name of off-site installation or transporter (Page 23): PPM, INC

C. Site type code (Page 24): F

D. Site relationship code (Page 24): D

E. Address of off-site installation (Page 24): Street: 4105 WHITAKER AVENUE; City: PHILADELPHIA; State: PA; Zip Code: 19124-

Comments:

BEFORE COPYING FORM, ATTACH SITE IDENTIFICATION LABEL OR ENTER:

SITE NAME U.S. COAST GUARD YARD

EPA ID NO. MD4690307844

MARYLAND HAZARDOUS AND SOLID WASTE MANAGEMENT ADMINISTRATION

1987 Hazardous Waste Generation and Shipment Report

FORM **OI**

OFF-SITE IDENTIFICATION

WHO MUST COMPLETE THIS FORM? Form OI must be completed by every site that shipped hazardous waste off site and every site that received hazardous waste from off site during 1987.

☐ Mark [X] if you are not required to complete Form OI.

INSTRUCTIONS: Please read the detailed instructions beginning on page 23 of the 1987 Hazardous Waste Generation and Shipment Report Instructions booklet before completing this form.

Complete A through E for each off-site installation to which you shipped waste or from which you received waste during 1987.

Complete A through D for every transporter you used during the reporting year.

Throughout this form enter "DK" if the information requested is not known or is not available; enter "NA" if the information requested is not applicable. Make and complete additional copies of this form if you need to identify more than four off-site installations or transporters.

Site 1

A. EPA ID No. of off-site installation or transporter (Instruction page 22): NYD980716994 17

B. Name of off-site installation or transporter (Page 23): HAZMAT ENVIRONMENTAL GROUP, INC.

C. Site type code (Page 24): T

D. Site relationship code (Page 24): D

E. Address of off-site installation (Page 24): Street N/A; City ____ State __ Zip Code _____-____

Site 2

A. EPA ID No. of off-site installation or transporter (Instruction page 22): PAD064035819

B. Name of off-site installation or transporter (Page 23): HORWITH TRUCKS, INC.

C. Site type code (Page 24): T

D. Site relationship code (Page 24): D

E. Address of off-site installation (Page 24): Street N/A; City ____ State __ Zip Code _____-____

Site 3

A. EPA ID No. of off-site installation or transporter (Instruction page 22): ILD098642424

B. Name of off-site installation or transporter (Page 23): TRADE WASTE INCINERATION

C. Site type code (Page 24): F

D. Site relationship code (Page 24): D

E. Address of off-site installation (Page 24): Street 7 MOBILE AVENUE; City SAUGET State IL Zip Code 62201-1069

Site 4

A. EPA ID No. of off-site installation or transporter (Instruction page 22): NYD049836679

B. Name of off-site installation or transporter (Page 23): SCA CHEMICAL SERVICES

C. Site type code (Page 24): F

D. Site relationship code (Page 24): D

E. Address of off-site installation (Page 24): Street P.O. BOX 200, 1550 BALMER ROAD; City MODEL CITY State NY Zip Code 14107-____

Comments:

BEFORE COPYING FORM, ATTACH SITE IDENTIFICATION LABEL OR ENTER:

SITE NAME: U.S. COAST GUARD YARD

EPA ID NO.: MD4690130078414

FORM **OI**

MARYLAND HAZARDOUS AND SOLID WASTE MANAGEMENT ADMINISTRATION

1987 Hazardous Waste Generation and Shipment Report

OFF-SITE IDENTIFICATION

WHO MUST COMPLETE THIS FORM? Form OI must be completed by every site that shipped hazardous waste off site and every site that received hazardous waste from off site during 1987.

☐ Mark [X] if you are not required to complete Form OI.

INSTRUCTIONS: Please read the detailed instructions beginning on page 23 of the 1987 Hazardous Waste Generation and Shipment Report Instructions booklet before completing this form.

Complete A through E for each off-site installation to which you shipped waste or from which you received waste during 1987.

Complete A through D for every transporter you used during the reporting year.

Throughout this form enter "DK" if the information requested is not known or is not available; enter "NA" if the information requested is not applicable. Make and complete additional copies of this form if you need to identify more than four off-site installations or transporters.

Site 1

A. EPA ID No. of off-site installation or transporter (Instruction page 23): ALD010016224164

B. Name of off-site installation or transporter (Page 23): CHEMICAL WASTE MANAGEMENT, INC.

C. Site type code (Page 24): E

D. Site relationship code (Page 24): D

E. Address of off-site installation (Page 24): Street: EMELLE FACILITY, AL HWY 17 AT MILE MARKER 163; City: EMELLE; State: AL; Zip Code: 35459-

Site 2

A. EPA ID No. of off-site installation or transporter (Instruction page 23): ALD070515137617

B. Name of off-site installation or transporter (Page 23): M & M CHEMICAL & EQUIPMENT COMPANY

C. Site type code (Page 24): E

D. Site relationship code (Page 24): D

E. Address of off-site installation (Page 24): Street: HWY 11 NORTH (P.O. BOX 291); City: REECE CITY; State: AL; Zip Code: 35902-

Site 3

A. EPA ID No. of off-site installation or transporter (Instruction page 23):

B. Name of off-site installation or transporter (Page 23):

C. Site type code (Page 24):

D. Site relationship code (Page 24):

E. Address of off-site installation (Page 24): Street: ; City: ; State: ; Zip Code: -

Site 4

A. EPA ID No. of off-site installation or transporter (Instruction page 23):

B. Name of off-site installation or transporter (Page 23):

C. Site type code (Page 24):

D. Site relationship code (Page 24):

E. Address of off-site installation (Page 24): Street: ; City: ; State: ; Zip Code: -

Comments:

BEFORE COPYING FORM, ATTACH SITE IDENTIFICATION LABEL.

[ ] Mark [X] if you are not required to complete.

MARYLAND HAZARDOUS AND SOLID WASTE MANAGEMENT

INSTRUCTIONS: Please read the detailed instructions beginning on page 23 of the 1987 Hazardous Waste Generation and Shipment Report instructions booklet before completing this form.

Complete A through E for each off-site installation to which you shipped waste or from which you received waste during 1987.

Complete A through D for every transporter you used during the reporting year.

Throughout this form enter "DK" if the information requested is not known or is not available; enter "NA" if the information requested is not applicable. Make and complete additional copies of this form if you need to identify more than four off-site installations or transporters.

Site	A. EPA ID No. of off-site installation or transporter (Instruction page 23)	B. Name of off-site installation or transporter (Page 23)	C. Site type code (Page 24)	D. Site relationship code (Page 24)	E. Address of off-site installation (Page 24)
1	MDP000002450	U.S. COAST GUARD YARD	G	D	Street: 10800 FRANK TIPPETT ROAD; City: CHELTENHAM; State: MD; Zip Code: 20623-
2	MD0170022602	U.S. NAVAL ACADEMY			Street: N/A; City: ; State: ; Zip Code:
3					Street: ; City: ; State: ; Zip Code:
4					Street: ; City: ; State: ; Zip Code:

Comments:

BEFORE COPYING FORM, ATTACH SITE IDENTIFICATION LABEL OR ENTER:

SITE NAME: U.S. COAST GUARD YARD

EPA ID NO.: MD4690307844

FORM **WM**

MARYLAND HAZARDOUS AND SOLID WASTE MANAGEMENT ADMINISTRATION

1987 Hazardous Waste Report and Shipment Report

WASTE MINIMIZATION

PART I

WHO MUST COMPLETE THIS FORM? Form WM Part I, describing efforts undertaken to implement waste minimization programs, must be completed by all generators required to file an Annual/Biennial Report. This requirement was established in response to statutory provisions included in the Hazardous and Solid Waste Amendments of 1984 (HSWA).

NOTE: Generators shipping hazardous waste off site are required to certify, on item 16 of the Uniform Hazardous Waste Manifest, that they have a program in place to reduce, to the degree determined economically practicable, the volume and toxicity of hazardous waste generated. A similar certification must also be made by generators who have obtained a RCRA treatment, storage, or disposal permit. Consistent with these certification requirements, generators must report, on Form WM Part I, the efforts undertaken to implement waste minimization programs.

INSTRUCTIONS: Please read the detailed instructions on page 25 of the 1987 Hazardous Waste Generation and Shipment Report Instructions booklet before completing this form.

Answer questions 1 through 10. Throughout this form enter "DK" if the information requested is not known or is not available; enter "NA" if the information requested is not applicable.

1. Did this site create or expand a source reduction and recycling program?

	1987		1986		Prior Years	
	Yes	No	Yes	No	Yes	No
Create	X			X		DK
Expand	X		X			DK

2. Did this site have a written policy or statement that outlined goals, objectives and methods for source reduction and recycling of hazardous waste?

	1987	1986	Prior Years
Yes	X	X	X
No			

3. What was the dollar amount of capital expenditures (plant and equipment) and operating costs devoted to source reduction and recycling of hazardous waste? ENTER ZERO (0) IF NONE.

	1987	1986	Prior Years
Capital expenditures	$ DK	$ DK	$ DK
Operating costs	$ DK	$ DK	$ DK

4. Did this site have an employee training program or provide incentives (bonuses, awards, personal recognition, etc.) to identify and implement source reduction and recycling opportunities and activities?

	1987		1986		Prior Years	
	Yes	No	Yes	No	Yes	No
Training	X		X			
Incentives	X		X		X	

6. Did this site identify or implement new SOURCE REDUCTION opportunities to reduce the volume and/or toxicity of hazardous waste generated at this site?

	1997		1996		Prior Years	
	Yes	No	Yes	No	Yes	No
Identify	[X]	[ ]	[ ]	[X]	[ ]	[X]
Implement	[X]	[ ]	[ ]	[X]	[ ]	[X]

7. What factors have delayed or prevented implementation of SOURCE REDUCTION opportunities. MARK [X] NEXT TO ALL THAT APPLY.

- [ ] a. Insufficient capital to install new source reduction equipment or implement new source reduction practices.
- [X] b. Lack of technical information on source reduction techniques, applicable to my specific production processes.
- [ ] c. Source reduction is not economically feasible: cost savings in waste management or production will not recover the capital investment.
- [ ] d. Concern that product quality may decline as a result of source reduction.
- [ ] e. Technical limitations of the production processes.
- [ ] f. Permitting burdens.
- [ ] g. Other (SPECIFY) _____

8. Did this site identify or implement new RECYCLING opportunities to reduce the volume and/or toxicity of hazardous waste generated at this site or subsequently treated, stored, or disposed of on site or off site?

	1997		1996		Prior Years	
	Yes	No	Yes	No	Yes	No
Identify	[ ]	[X]	[ ]	[X]	[ ]	[X]
Implement	[ ]	[X]	[ ]	[X]	[ ]	[X]

EPA ID NO. MD469030784

9. What factors have delayed or prevented implementation of on-site or off-site RECYCLING opportunities. MARK [X] NEXT TO ALL THAT APPLY.

- [ ] a. Insufficient capital to install new recycling equipment or implement new recycling practices.
- [ ] b. Lack of technical information on recycling techniques applicable to this site's specific production processes.
- [ ] c. Recycling is not economically feasible: cost savings in waste management or production will not recover the capital investment.
- [ ] d. Concern that product quality may decline as a result of recycling.
- [ ] e. Requirements to manifest wastes inhibit shipments off site for recycling.
- [ ] f. Financial liability provisions inhibit shipments off site for recycling.
- [ ] g. Technical limitations of product processes inhibit shipments off site for recycling.
- [ ] h. Technical limitations of production processes inhibit on-site recycling.
- [ ] i. Permitting burdens inhibit recycling.
- [ ] j. Lack of permitted off-site recycling facilities.
- [X] k. Unable to identify a market for recyclable materials.
- [ ] l. Other (SPECIFY) _____

10. Has this site requested or received technical information or financial assistance on source reduction and/or recycling practices from any of the following sources? MARK [X] NEXT TO ALL THAT APPLY.

	1987		1986		Prior Years	
	Technical	Financial	Technical	Financial	Technical	Financial
a. Local government	[ ]	[ ]	[DK]	[DK]	[DK]	[DK]
b. State government	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
c. Federal government	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
d. Trade associations	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
e. Educational institutions	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
f. Suppliers	[X]	[ ]	[ ]	[ ]	[ ]	[ ]
g. Other parts of your firm	[X]	[ ]	[ ]	[ ]	[ ]	[ ]
h. Other firms/consultants	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
i. No request made	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
j. Other (conferences, literature, etc.)_____	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]

Comments:

BEFORE COPYING FORM, ATTACH SITE IDENTIFICATION LABEL OR ENTER:

SITE NAME U.S. COAST GUARD YARD

EPA ID NO. M,D,4,6,9,0,3,0,7,8,4,4

FORM **WM**

MARYLAND HAZARDOUS AND SOLID WASTE MANAGEMENT ADMINISTRATION

1987 Hazardous Waste Report and Shipment Report

WASTE MINIMIZATION

PART II

WHO MUST COMPLETE THIS FORM? Form WM Part II must be completed only by generators that engaged in an activity during 1987 that resulted in waste minimization.

Waste minimization means:
(1) reduction in the volume and/or toxicity of hazardous waste generated as a result of source reduction; and/or,
(2) reduction in the volume and/or toxicity of hazardous waste subsequently treated, stored, or disposed as a result of on-site or off-site recycling.

☐ Mark ☒ and do not complete this form if no waste minimization results were achieved during 1987.

INSTRUCTIONS: Please read the detailed instructions beginning on page 26 of the 1987 Hazardous Waste Generation and Shipment Report instructions booklet before completing this form.

Make and complete a photocopy of this form for each hazardous waste minimized in 1987.

Complete Sections I through IV. Throughout this form enter "DK" if the information requested is not known or is not available; enter "NA" if the information requested is not applicable.

Sec. I

A. EPA hazardous waste code Instruction Page 27	B. State hazardous waste code Page 27	C. Product or service description Page 27	D. Product or service SIC code Page 27
D,0,0,2	N,A	SHIPBOARD MACHINERY	3,7,3,1

E. Waste form code Page 27	F. UOM Page 28	G. Density Page 28	H. Source description: Page 28	I. Source code Page 28
H,3,0	G	D,K . ☐ lbs/gal ☐ kg	SOLVENT DEGREASING TANKS	1,0

Sec. II

A. 1986 quantity generated Instruction Page 29	B. 1987 quantity generated Page 29	C. Production ratio Page 29	D. Toxicity change code Page 31
1,0,0,0	0	SEE NOTE	6

E. Waste minimization: recycling Page 31			F. Waste minimization: source reduction Page 32			
Code		Quantity recycled	Code			Quantity prevented
1. ☐	2. ☐	NA	1. 2	2. ☐	3. ☐	1,0,0,0

Sec. III

A. Narrative description of waste minimization project or activity and results achieved Instruction Page 39

CORROSIVE CLEANERS WERE REPLACED WITH NON-CORROSIVE AND NON-TOXIC CITRUS BASE CLEANERS.

OVER —>

Sec. IV.	**Instructions:** Answer questions 1 through 4. Mark [X] next to the effects produced by the source reduction and/or recycling activity reported on this form in Sections I through III.

1. What effect did this site's source reduction and/or recycling activity have on the **quantity** of **water effluent** produced by hazardous waste generation processes during 1987?

   - [ ] a. Increase in the quantity of water effluent
   - [ ] b. Decrease in the quantity of water effluent
   - [X] c. No effect on the quantity of water effluent
   - [ ] d. Don't know

2. What effect did this site's source reduction and/or recycling activity have on the **toxicity** of **water effluent** produced by hazardous waste generation processes during 1987?

   - [ ] a. Increase in the concentration of hazardous constituents
   - [ ] b. Decrease in the concentration of hazardous constituents
   - [X] c. No effect on the concentration of hazardous constituents
   - [ ] d. Don't know

3. What effect did this site's source reduction and/or recycling activity have on the **quantity** of **air emissions** produced by hazardous waste generation processes during 1987?

   - [ ] a. Increase in the quantity of air emissions
   - [ ] b. Decrease in the quantity of air emissions
   - [ ] c. No effect on the quantity of air emissions
   - [X] d. Don't know

4. What effect did this site's source reduction and/or recycling activity have on the **toxicity** of the **air emissions** produced by hazardous waste generation processes during 1987?

   - [ ] a. Increase in the concentration of hazardous constituents
   - [ ] b. Decrease in the concentration of hazardous constituents
   - [ ] c. No effect on the concentration of hazardous constituents
   - [X] d. Don't know

Comments:

C. REPAIR OF SHIPS AND SHIPS SYSTEMS VERY VARIABLE. PRODUCTION RATION NOT APPLICABLE.

Chemicals Listed in 1980s Coast Guard Hazardous Waste Reports
August 10, 2012

Alanite

Cadmium Chloride

Sodium Hydroxide

Sodium Meta Silicate

Sodium Carbonate

Diversy

Oakite

Pensolve

PCB

Mercury

Calcium Hypochlorite

Sulfuric acid

Acetone

Ethylene Glycol

Styrene monomer - inhibited

Stoddard solvent (Tetrachloroethane)

Waste paint/thinners/resins/lead/solvents

Waste solvent caulk

Waste barium oxide (SCBA)

Zinc Chromate

Polyurathane

DICG-40-94-P-3944

6850-012G4687 P.1/3

APR 26 '94 14:12 MARYLAND CHEMICAL

Diversey Wyandotte Corporation

1532 Biddle Avenue
Wyandotte, Michigan 48192

Material Safety Data Sheet

Emergency Telephone (313) 281-0930

D-102

SECTION I — PRODUCT IDENTIFICATION

		Product: DIVERSEY WYANDOTTE 500 B
PC: 2228A, 2754C	R 9/82	Description Chemical Mixture — Acid Cleaner

SECTION II — HAZARDOUS INGREDIENTS

CAS Number	Chemical Component	%	TLV (Units)	Hazard Data
7681-38-1	Sodium bisulfate	<25	-	Forms corrosive acidic solution when dissolved in water.
16893-85-9	Sodium silicofluoride	<10	2.5 mg (F)/m^3	Causes burns to skin, eyes and mucous membranes. High toxic by ingestion.

SECTION III — PHYSICAL DATA

XX Solid Liquid	Appearance and Odor: Free-flowing pink to tan granular powder
Specific Gravity: 65 lbs/ft^3	pH at 25°C: (1% in water) less than 1.4
Solubility in Water: 100%	Freezing Point: NA
Percent Volatiles (by weight): NA	Phosphorus: None

SECTION IV — FIRE AND EXPLOSIVE HAZARD DATA

Flash Point (method)	Flammable Limits	LFL	UFL
Not combustible	N/A	-	-

Extinguishing Media: Not a fire hazard - use water fog.

Special Fire Hazards and Equipment Required: Forms corrosive acidic solutions with water. Avoid contact with skin. Although this product is not combustible, good fire-fighting practice dictates the use of self-contained breathing apparatus and turn-out gear for fires in area of product.

SECTION V — REACTIVE HAZARDS

Product Stable: Yes	Unstable at ____ °F ____ °C	Hazardous Polymerization: None	Will Not Occur ~~May Occur~~

Conditions to Avoid: Store in a cool, dry place. Avoid contaminating with organic materials.

Incompatibility (Materials to Avoid): Keep away from strong alkali. Do not mix with chlorinated products as irritating or toxic gases may be released.

Hazardous Decomposition Products: May release hydrogen gas if allowed to contact copper, brass, iron or heavy metals.

Product DIVERSEY WYANDOTTE 500B

SECTION VI — HEALTH HAZARDS

Eyes Corrosive. Causes severe burns or irritation to eyes. Damage may not be reversible.

Skin Causes severe irritation or burns resulting in redness and pain and possible tissue damage.

Ingestion Fatal or Harmful if swallowed. Causes nausea, vomiting and burns to mouth and esophogus. May cause central nervous system depression.

Inhalation Causes moderate to severe irritation to nose, throat and lung tissue if mists or vapors are inhaled.

Threshold Limit Value Estimated 5 mg/m^3

Principal Routes of Absorption
Direct contact, swallowing or breathing of mists.

Acute Effects of Overexposure
Corrosive. Causes burns or irritation to tissues.

Chronic Effects of Overexposure
None known.

FIRST AID PROCEDURE—*NEVER GIVE FLUIDS* OR INDUCE VOMITING IF PATIENT IS UNCONSCIOUS OR HAVING CONVULSIONS. CALL A PHYSICIAN.

Eyes Flush immediately with plenty of water for at least 15 minutes. Upper and lower eyelids should be raised to insure complete removal of chemical. Get immediate medical attention.

Skin Flush with water. Wash with mild soap and water after removing contaminated clothing. If irritation or pain is present, get medical attention. Wash clothing before reuse.

Ingestion If swallowed, immediately drink large amounts of milk, water or gelatin solution. Induce vomiting by touching the back of throat with finger. Get immediate medical attention.

Inhalation Remove to fresh air. If breathing difficulty continues, give oxygen. Get medical attention.

SECTION VII — NORMAL HANDLING PROCEDURES

Precautions to be taken in Handling and Storage. Keep container closed when moving or when not in use. KEEP OUT OF REACH OF CHILDREN. Do not store with food. Wash after handling paying particular attention to areas under fingernails.

Protective Equipment

Eyes Goggles, face shield or side-shield safety glasses.

Gloves Rubber or acid resistant.

Other clothing to prevent skin contact. Eye wash in area of use.

Ventilation Requirements Mechanical to maintain TLV. NIOSH approved acid cartridge respirator in areas of high mist or fumes.

Corrosive Action on Materials Corrosive to aluminum, brass, copper and most soft metals.

SECTION VIII — SPILL OR LEAK CONTROL PROCEDURES

Steps to be taken in case of Spills. Forms acidic solutions when dissolved in water. Sweep up and place in a plastic drum.

Waste Disposal Methods Bury in an approved chemical waste dump or discharge dilute solution to sewer. Consult local regulations. Wash affected areas thoroughly. Liquid waste is an acidic solution. Neutralize with lime water or dilute sodium hydroxide solution to a specific pH. Consult local regulations.

The above information is believed to be accurate and discloses the known hazards for this product as of this date. No additional warranties are made.

Date MAR 25 1985

Signed _____
DIVERSEY WYANDOTTE

NSN-6850-00-LG2-4964

RECEIVED

JUN 30 1987

SAFETY OFFICE

Bldg 78

arcal service hot line (800) 638-2672 USA
(800) 544-7225 Canada

Material Safety Data Sheet

A. IDENTIFICATION AND EMERGENCY INFORMATION

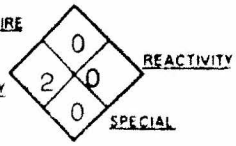
DATE ISSUED June 1987

PRODUCT NAME ARCAL "AL-A-NITE"

CHEMICAL NAME /Nature Aqueous acid composition

PRODUCT APPEARANCE AND ODOR Clear light blue liquid;acid odor

HAZARD RATING
4 = EXTREME
3 = HIGH
2 = MODERATE
1 = SLIGHT
0 = INSIGNIFICANT



B. COMPONENTS AND HAZARD INFORMATION

Hazardous Components (Specific Chemical Identity; Common Name(s))	OSHA PEL	ACGIH TLV	Other Limits Recommended	% (optional)
Hydrofluoric acid CAS#7664-39-3	3 ppm	3 ppm		-- / 12% / Chemis

C. EMERGENCY AND FIRST-AID PROCEDURES

EYE CONTACT
If splashed into the eyes, flush with clear water for 15 minutes or until irritation subsides. If irritation persists, call a physician.

SKIN CONTACT
In case of skin contact, remove any contaminated clothing and wash skin thoroughly with soap and water.

INHALATION
If overcome by vapor, remove from exposure and call a physician immediately. If breathing is irregular or has stopped, start resuscitation, administer oxygen, if available.

INGESTION
If ingested, DO NOT induce vomiting; call a physician immediately.

D. FIRE AND EXPLOSION HAZARD INFORMATION

FLASH POINT none

AUTOIGNITION TEMPERATURE none

HANDLING PRECAUTIONS store in cool dry place. Avoid all skin contact.

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) HAZARD IDENTIFICATION:	Health	Flammability	Reactivity
	2	0	0

FLAMMABLE OR EXPLOSIVE LIMITS (APPROXIMATE PERCENT BY VOLUME IN AIR)

Estimated values: Lower Flammable Limit -- Upper Flammable Limit --

EXTINGUISHING MEDIA AND FIRE-FIGHTING PROCEDURES Water, foam dry chemicals.
use self contained breathing aparatus

COMPOSITION PRODUCTS UNDER FIRE CONDITIONS fire exposed containers will give off hydrogen fluoride gas

"EMPTY" CONTAINER WARNING ---

E. HEALTH AND HAZARD INFORMATION

VARIABILITY AMONG INDIVIDUALS Health risks vary from person to person. Minimize exposure.

EFFECTS OF OVEREXPOSURE (Signs and symptoms of exposure) Iritation and severe burns on skin and eyes.
inhaled: iritation of mucous membranes: coughing

Route(s) of Entry: Inhalation? x Skin? x Ingestion? x

NATURE OF HAZARD AND TOXICITY INFORMATION Severe burns on skin and eyes.

Carcinogenicity: none NTP? -- IARC Monographs? -- OSHA Regulated? --

F. PHYSICAL DATA

The following data are approximate or typical values and should not be used for precise design purposes:

BOILING RANGE approx. 212 F

SPECIFIC GRAVITY (15.6 C/15.6 C) 1.1

MELTING POINT Unknown

pH 1-2

VISCOSITY N/A

VAPOR PRESSURE (mm Hg @20° C) Unknown

VAPOR DENSITY (AIR = 1) Unknown

PERCENT VOLATILE BY VOLUME 100%

EVAPORATION RATE @ 1 ATM. AND 25 C (77 F) (n-BUTYL ACETATE = 1) close to water

SOLUBILITY IN WATER @ 1 ATM. AND 25 C (77 F) Complete

G. REACTIVITY

This product is stable and hazardous polimerization will not occur.
Avoid contact with oxidizable materials. Thermal decomposition will produce hydrogen fluoride.

H. SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED Flush with water. Neutralization:with alkalines such as soda ash, ammonia water, or alkaline detergents without chlorine.

WASTE DISPOSAL METHOD Neutralization with alkaline, preferably with lime Cao.
Dispose in accordance with federal, state and local regulations.

I. PROTECTION AND PRECAUTIONS

VENTILATION
Use only with ventilation sufficient to prevent exceeding recommended exposure limit or buildup of explosive concentrations of vapor in air.

RESPIRATORY PROTECTION
Use supplied-air respiratory protection in confined or enclosed spaces, if needed.

PROTECTIVE GLOVES
Use chemical-resistant gloves, if needed, to avoid prolonged or repeated skin contact.

EYE PROTECTION
Use splash goggles or face shield when eye contact may occur.

OTHER PROTECTIVE EQUIPMENT
Use chemical-resistant apron or other impervious clothing, if needed, to avoid contaminating regular clothing which could result in prolonged or repeated skin contact.

WORK PRACTICES / ENGINEERING CONTROLS
Keep containers and storage containers closed when not not in use. Do not store near heat, sparks, flame or strong oxidants.

PERSONAL HYGIENE
Minimize breathing vapor, mist or fumes. Avoid prolonged or repeated contact with skin. Remove contaminated clothing; launder or dry-clean before reuse. Remove contaminated shoes and thoroughly clean before reuse; discard if soaked. Cleanse skin thoroughly after contact, before breaks and meals, and at end of work period. Product is readily removed from skin by waterless hand cleaners followed by washing thoroughly with soap and water.

J. TRANSPORTATION INFORMATION

DOT IDENTIFICATION NUMBER --

arcal CHEMICALS, INC

(301) 336-9300 - USA
(514) 494-9218 - Canada
(800) 638-2672 - USA & Canada

6850-00LG24964

Material Safety Data Sheet

A. IDENTIFICATION AND EMERGENCY INFORMATION

DATE ISSUED June 1987

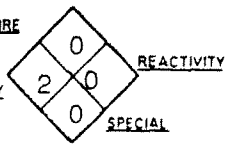
PRODUCT NAME ARCAL "AL-A-NITE"

CHEMICAL NAME /Nature Aqueous acid composition

PRODUCT APPEARANCE AND ODOR Clear light blue liquid;acid odor

HAZARD RATING

4 = EXTREME
3 = HIGH
2 = MODERATE
1 = SLIGHT
0 = INSIGNIFICANT



B. COMPONENTS AND HAZARD INFORMATION

Hazardous Components (Specific Chemical Identity; Common Name(s))	OSHA PEL	ACGIH TLV	Other Limits Recommended	% (optional)
Hydrofluoric acid CAS#7664-39-3	3 ppm	3 ppm		--

C. EMERGENCY AND FIRST-AID PROCEDURES

EYE CONTACT
If splashed into the eyes, flush with clear water for 15 minutes or until irritation subsides. If irritation persists, call a physician.

SKIN CONTACT
In case of skin contact, remove any contaminated clothing and wash skin thoroughly with soap and water.

INHALATION
If overcome by vapor, remove from exposure and call a physician immediately. If breathing is irregular or has stopped, start resuscitation, administer oxygen, if available.

INGESTION
If ingested, DO NOT induce vomiting; call a physician immediately.

D. FIRE AND EXPLOSION HAZARD INFORMATION

FLASH POINT none AUTOIGNITION TEMPERATURE none

HANDLING PRECAUTIONS store in cool dry place. Avoid all skin contact.

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) HAZARD IDENTIFICATION:	Health	Flammability	Reactivity
	2	0	0

FLAMMABLE OR EXPLOSIVE LIMITS (APPROXIMATE PERCENT BY VOLUME IN AIR)

Estimated values: Lower Flammable Limit -- Upper Flammable Limit --

EXTINGUISHING MEDIA AND FIRE-FIGHTING PROCEDURES Water, foam dry chemicals.
use self contained breathing aparatus

DECOMPOSITION PRODUCTS UNDER FIRE CONDITIONS fire exposed containers will give off hydrogen fluoride gas

"EMPTY" CONTAINER WARNING ---

E. HEALTH AND HAZARD INFORMATION

VARIABILITY AMONG INDIVIDUALS Health risks vary from person to person. Minimize exposure.

EFFECTS OF OVEREXPOSURE (Signs and symptoms of exposure) Iritation and severe burns on skin and eyes. inhaled: iritation of mucous membranes: coughing

Route(s) of Entry: Inhalation? x Skin? x Ingestion? x

NATURE OF HAZARD AND TOXICITY INFORMATION Severe burns on skin and eyes.

Carcinogenicity: none NTP? -- IARC Monographs? -- OSHA Regulated? --

F. PHYSICAL DATA

The following data are approximate or typical values and should not be used for precise design purposes:

BOILING RANGE approx. 212 F

SPECIFIC GRAVITY (15.6 C/15.6 C) 1.1

MELTING POINT Unknown

pH 1-2

VISCOSITY N/A

VAPOR PRESSURE (mm Hg @20° C) Unknown

VAPOR DENSITY (AIR = 1) Unknown

PERCENT VOLATILE BY VOLUME 100%

EVAPORATION RATE @ 1 ATM. AND 25 C (77 F) (n-BUTYL ACETATE = 1) close to water

SOLUBILITY IN WATER @ 1 ATM. AND 25 C (77 F) Complete

G. REACTIVITY

This product is stable and hazardous polimerization will not occur. Avoid contact with oxidizable materials. Thermal decomposition will produce hydrogen fluoride.

H. SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED Flush with water. Neutralization:with alkalines such as soda ash, ammonia water, or alkaline detergents without chlorine.

WASTE DISPOSAL METHOD Neutralization with alkaline, preferably with lime Cao. Dispose in accordance with federal, state and local regulations.

I. PROTECTION AND PRECAUTIONS

VENTILATION
Use only with ventilation sufficient to prevent exceeding recommended exposure limit or buildup of explosive concentrations of vapor in air.

RESPIRATORY PROTECTION
Use supplied-air respiratory protection in confined or enclosed spaces, if needed.

PROTECTIVE GLOVES
Use chemical-resistant gloves, if needed, to avoid prolonged or repeated skin contact.

EYE PROTECTION
Use splash goggles or face shield when eye contact may occur.

OTHER PROTECTIVE EQUIPMENT
Use chemical-resistant apron or other impervious clothing, if needed, to avoid contaminating regular clothing which could result in prolonged or repeated skin contact.

WORK PRACTICES / ENGINEERING CONTROLS
Keep containers and storage containers closed when not not in use. Do not store near heat, sparks, flame or strong oxidants.

PERSONAL HYGIENE
Minimize breathing vapor, mist or fumes. Avoid prolonged or repeated contact with skin. Remove contaminated clothing; launder or dry-clean before reuse. Remove contaminated shoes and thoroughly clean before reuse; discard if soaked. Cleanse skin thoroughly after contact, before breaks and meals, and at end of work period. Product is readily removed from skin by waterless hand cleaners followed by washing thoroughly with soap and water.

J. TRANSPORTATION INFORMATION

DOT IDENTIFICATION NUMBER --

WAGE AND LABOR STANDARDS ADMINISTRATION
Bureau of Labor Standards

MATERIAL SAFETY DATA SHEET 6850-00 L62 4964

DOR'S NAME

BETHLEHEM STEEL CORPORATION

PURCHASE ORDER NO. | REQUISITION NO.

SECTION I

ANUFACTURER'S NAME: Arcal Chemicals, Inc.
EMERGENCY TELEPHONE NO.: (301) 336-9300
DRESS (Number, Street, City, State, and ZIP Code): 7320-86th Avenue Central Industrial Park Seat Pleasant, Md. 20027
EMICAL NAME AND SYNONYMS
TRADE NAME AND SYNONYMS: Arcal "AL-A-NITE"
EMICAL FAMILY: Acid Composition/aqueous/
FORMULA

SECTION II—HAZARDOUS INGREDIENTS

PAINTS PRESERVATIVES AND SOLVENTS	%	TLV (Units)	ALLOYS AND METALLIC COATINGS	%	TLV (Units)
IGMENTS none			BASE METAL none		
ATALYST none			ALLOYS none		
EHICLE none			METALLIC COATINGS none		
OLVENTS none			FILLER METAL PLUS COATING OR CORE FLUX none		
DDITIVES none			OTHERS none		
THERS none					

HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS, OR GASES	%	TLV (Units)

SECTION III—PHYSICAL DATA

ILING POINT (°F.)	Appr. 212	SPECIFIC GRAVITY (H_2O = 1)	1.1
'OR PRESSURE (mmHg.)	Unknown	PERCENT VOLATILE BY VOLUME (%)	100
'OR DENSITY AIR = 1)	Unknown	EVAPORATION RATE (=1)	close to water
UBILITY IN WATER	Soluble (unlimited)		
EARANCE AND ODOR	Clear light blue liquid with acid odor		

SECTION IV—FIRE AND EXPLOSION HAZARD DATA

'OINT (Method Used): None
FLAMMABLE LIMITS | LEL | UEL
INGUISHING MEDIA
FIRE FIGHTING PROCEDURES
FIRE AND EXPLOSION HAZARDS: None

SECTION V—HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE

As vapors of mineral acids/ contains Hydrofluoric Acid/ 6-8% + surfactants (Dr Grof for inform

EFFECTS OF OVEREXPOSURE

Attacks the skin if in contact

Inhaled: irritation of mucous membranes; coughing

EMERGENCY AND FIRST AID PROCEDURES

Flush with ample running water.---Contacted skin surface: treat with diluted ammonia water/ appr. 5% vol. in 95% vol. water/, or baking soda in water---then flush again. Eyes: flush with ample water. See physician.

SECTION VI—REACTIVITY DATA

		CONDITIONS TO AVOID
STABILITY	UNSTABLE	
	STABLE Yes	

INCOMPATABILITY (Materials to avoid)

HAZARDOUS DECOMPOSITION PRODUCTS

		CONDITIONS TO AVOID
HAZARADOUS POLYMERIZATION	MAY OCCUR	
	WILL NOT OCCUR Yes	

SECTION VII—SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

Flush with water---Neutralization: with alkalines, such as soda ash, ammonia water, or alkalin detergents without chlorine content.

WASTE DISPOSAL METHOD

Neutralization with alkaline---preferably with lime/CaO.

SECTION VIII—SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (Specify type)

Proper ventillation

VENTILATION	LOCAL EXHAUST	SPECIAL
	MECHANICAL (General)	OTHER

PROTECTIVE GLOVES

Rubber gloves

EYE PROTECTION

Goggles against accidental spillage.

OTHER PROTECTIVE EQUIPMENT

Plastic aprons as by any other acid handeling.

SECTION IX—SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING

No special precautions.

OTHER PRECAUTIONS

U.S. DEPARTMENT OF LABOR
Occupational Safety and Health Administration

Form Approved
OMB No. 44-R1387

MATERIAL SAFETY DATA SHEET

DiverseyWyandotte Corporation

WYANDOTTE, MICHIGAN 48192
CALL TOLL FREE: 1-800-521-8140
IN MICHIGAN: 1-800-482-8010

nd Health Regulations for Ship Repairing,
eaking (29 CFR 1915, 1916, 1917)

ECTION I

	EMERGENCY TELEPHONE NO.
	313-281-0930
CHEMICAL NAME AND SYNONYMS	TRADE NAME AND SYNONYMS: DIVERSEY NO. 500-B
CHEMICAL FAMILY: Granular Acid	FORMULA

SECTION II - HAZARDOUS INGREDIENTS

PAINTS, PRESERVATIVES, & SOLVENTS	%	TLV (Units)	ALLOYS AND METALLIC COATINGS	%	TLV (Units)
PIGMENTS			BASE METAL		
CATALYST			ALLOYS		
VEHICLE			METALLIC COATINGS		
SOLVENTS			FILLER METAL PLUS COATING OR CORE FLUX		
ADDITIVES			OTHERS		
OTHERS					

HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS, OR GASES	%	TLV (Units)
Sodium bisulfate	20	*
Sodium nitrate	5	*
Sodium Silicofluoride	5	*
* Not listed by A.C.G.I.H.		

SECTION III - PHYSICAL DATA

BOILING POINT (°F.)	N/A	SPECIFIC GRAVITY (H_2O=1)	N/A
VAPOR PRESSURE (mm Hg.)	N/A	PERCENT, VOLATILE BY VOLUME (%)	N/A
VAPOR DENSITY (AIR=1)	N/A	EVAPORATION RATE (_____ =1)	N/A
SOLUBILITY IN WATER	Complete	PH 1.5	
APPEARANCE AND ODOR	Pink to tan granular material with no apparent odor		

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method used)	FLAMMABLE LIMITS	Lel	Uel
None			
EXTINGUISHING MEDIA			
SPECIAL FIRE FIGHTING PROCEDURES			
UNUSUAL FIRE AND EXPLOSION HAZARDS			

SECTION V - HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE

EFFECTS OF OVEREXPOSURE

Aqueous solutions are strongly acidic and irritating.

EMERGENCY AND FIRST AID PROCEDURES

SKIN - Rinse off with water.

EYES - Flush with water for at least 15 minutes. See a physician.

SECTION VI - REACTIVITY DATA

STABILITY	UNSTABLE		CONDITIONS TO AVOID
	STABLE	X	

INCOMPATABILITY *(Materials to avoid)*

HAZARDOUS DECOMPOSITION PRODUCTS

HAZARDOUS POLYMERIZATION	MAY OCCUR		CONDITIONS TO AVOID
	WILL NOT OCCUR	X	

SECTION VII - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

Remove damaged container. Transfer to a new container. Sweep up spillage. Rinse area with water.

WASTE DISPOSAL METHOD

Neutralize solution with lime or soda ash. Allow to settle. Solution can then be put down drain.

SECTION VIII - SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION *(Specify type)*

VENTILATION	LOCAL EXHAUST X	SPECIAL
	MECHANICAL *(General)*	OTHER

PROTECTIVE GLOVES Rubber	EYE PROTECTION Goggles or face shield

OTHER PROTECTIVE EQUIPMENT

Rubber apron

SECTION IX - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING

Sodium nitrate is an oxidizing material. Store in cool, dry place away from inflammable organics or easily oxidizable substances.

OTHER PRECAUTIONS

Diversey Wyandotte Corporation
1532 Biddle Avenue
Wyandotte, Michigan 48192

Material Safety Data Sheet

Emergency Telephone (313) 281-0930

D-168

SECTION I — PRODUCT IDENTIFICATION

		Product: DIVERSEY WYANDOTTE 909
PC: 4001	R 1/82	Description: Chemical Mixture — Non-etch Aluminum Cleaner

SECTION II — HAZARDOUS INGREDIENTS

CAS Number	Chemical Component	%	TLV (Units)	Hazard Data
6834-92-0	Sodium metasilicate	<35	-	Severely irritating to eyes, skin and mucous membranes.

SECTION III — PHYSICAL DATA

XX Solid Liquid	Appearance and Odor: Off-white, granular powder with mild soap odor
Specific Gravity: 62.5 lbs/ft^3	pH at 25°C: (4% solution) 12.4
Solubility in Water: Complete	Freezing Point: N/A
Percent Volatiles (by weight): None	Phosphorus: 12.4% P

SECTION IV — FIRE AND EXPLOSIVE HAZARD DATA

Flash Point (method): N/A	Flammable Limits: Not combustible		LFL: -	UFL: -

Extinguishing Media: Water, water fog.

Special Fire Hazards and Equipment Required: Product makes alkaline solution when dissolved in water. Good firefighting practice dictates the use of self-contained breathing apparatus and turn-out gear for fires in the areas where product is stored.

SECTION V — REACTIVE HAZARDS

Product Stable: Yes	Unstable at ___ °F ___ °C	Hazardous Polymerization: None	Will Not Occur ~~May Occur~~

Conditions to Avoid: Do not mix with acids. Will release heat.

Incompatibility (Materials to Avoid): Avoid mixing with acids.

Hazardous Decomposition Products: None known.

Product DIVERSEY WYANDOTTE 909

SECTION VI — HEALTH HAZARDS

Eyes Severe irritation or burns may result in reddness, pain and possible reversible corneal damage.

Skin Severely irritating to skin.

Ingestion May cause pain, nausea and gastric distress.

Inhalation Avoid breathing dust which is irritating to nose, throat and lung tissue.

Threshold Limit Value Not established

Principal Routes of Absorption
Ingestion, inhalation or topical contact.

Acute Effects of Overexposure
Irritation due to alkaline nature of ingredients.

Chronic Effects of Overexposure
None known.

FIRST AID PROCEDURE—*NEVER GIVE FLUIDS* OR INDUCE VOMITING IF PATIENT IS UNCONSCIOUS OR HAVING CONVULSIONS. CALL A PHYSICIAN.

Eyes Flush eyes immediately with water for at least 15 minutes. Get immediate medical attention.

Skin Flush with water. If irritation develops, contact a physician.

Ingestion If swallowed, drink large amounts of water or milk. DO NOT induce vomiting. Get medical attention.

Inhalation If inhaled, remove to fresh air. If breathing difficulty persists, get medical attention.

SECTION VII — NORMAL HANDLING PROCEDURES

Precautions to be taken in Handling and Storage. Store in a cool, dry area. Do not store with acids. KEEP OUT OF REACH OF CHILDREN.

Protective Equipment
- Eyes: Goggles or side-shield safety glasses
- Gloves: Rubber or chemical resistant
- Other: Clothing to prevent skin contact

Ventilation Requirements Mechanical to control dust or mist.

Corrosive Action on Materials None known.

SECTION VIII — SPILL OR LEAK CONTROL PROCEDURES

Steps to be taken in case of Spills. Sweep up and place in a metal container. Bury in an approved chemical landfill. Rinse affected areas.

Waste Disposal Methods Makes alkaline solutions with water. May require neutralization with dilute acids to a specific pH before discharge to a sanitary sewer. Consult local regulations.

The above information is believed to be accurate and discloses the known hazards for this product as of this date. No additional warranties are m[illegible]

Date 8/5/82

Signed [signature]

U.S. DEPARTMENT OF LABOR
Occupational Safety and Health Administration

Form Approved
OMB No. 44-R1387

MATERIAL SAFETY DATA SHEET

nd Health Regulations for Ship Repairing,
eaking (29 CFR 1915, 1916, 1917)

DiverseyWyandotte Corporation
WYANDOTTE, MICHIGAN 48192
CALL TOLL FREE: 1-800-521-8140
IN MICHIGAN: 1-800-482-8010

ECTION I

EMERGENCY TELEPHONE NO.
313-281-0930

CHEMICAL NAME AND SYNONYMS

TRADE NAME AND SYNONYMS
DIVERSEY NO. 500-B

CHEMICAL FAMILY
Granular Acid

FORMULA

SECTION II - HAZARDOUS INGREDIENTS

PAINTS, PRESERVATIVES, & SOLVENTS	%	TLV (Units)	ALLOYS AND METALLIC COATINGS	%	TLV (Units)
PIGMENTS			BASE METAL		
CATALYST			ALLOYS		
VEHICLE			METALLIC COATINGS		
SOLVENTS			FILLER METAL PLUS COATING OR CORE FLUX		
ADDITIVES			OTHERS		
OTHERS					

HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS, OR GASES	%	TLV (Units)
Sodium bisulfate	20	*
Sodium nitrate	5	*
Sodium Silicofluoride	5	*
* Not listed by A.C.G.I.H.		

SECTION III - PHYSICAL DATA

BOILING POINT (°F.)	N/A	SPECIFIC GRAVITY (H_2O=1)	N/A
VAPOR PRESSURE (mm Hg.)	N/A	PERCENT, VOLATILE BY VOLUME (%)	N/A
VAPOR DENSITY (AIR=1)	N/A	EVAPORATION RATE (_____ =1)	N/A
SOLUBILITY IN WATER	Complete	PH 1.5	
APPEARANCE AND ODOR	Pink to tan granular material with no apparent odor		

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method used)	FLAMMABLE LIMITS	Lel	Uel
None			

EXTINGUISHING MEDIA

SPECIAL FIRE FIGHTING PROCEDURES

UNUSUAL FIRE AND EXPLOSION HAZARDS

(Continued on reverse side)

SECTION V - HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE

EFFECTS OF OVEREXPOSURE

Aqueous solutions are strongly acidic and irritating.

EMERGENCY AND FIRST AID PROCEDURES

SKIN - Rinse off with water.

EYES - Flush with water for at least 15 minutes. See a physician.

SECTION VI - REACTIVITY DATA

STABILITY	UNSTABLE		CONDITIONS TO AVOID
	STABLE	X	

INCOMPATABILITY *(Materials to avoid)*

HAZARDOUS DECOMPOSITION PRODUCTS

HAZARDOUS POLYMERIZATION	MAY OCCUR		CONDITIONS TO AVOID
	WILL NOT OCCUR	X	

SECTION VII - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

Remove damaged container. Transfer to a new container. Sweep up spillage. Rinse area with water.

WASTE DISPOSAL METHOD

Neutralize solution with lime or soda ash. Allow to settle. Solution can then be put down drain.

SECTION VIII - SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION *(Specify type)*

VENTILATION	LOCAL EXHAUST X	SPECIAL
	MECHANICAL *(General)*	OTHER

PROTECTIVE GLOVES Rubber	EYE PROTECTION Goggles or face shield

OTHER PROTECTIVE EQUIPMENT

Rubber apron

SECTION IX - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING

Sodium nitrate is an oxidizing material. Store in cool, dry place away from inflammable organics or easily oxidizable substances.

OTHER PRECAUTIONS

GPO 930-540

Diversey Chemicals
INDUSTRIAL DIVISION

800 - 521-5140
Dr. Don Garvin

technical & operating data

75-5
DIVERSEY 500B

Sulfuric acid
Ferric sulfate
Na nitrate
Na silica fluoride

NON-CHROMATED DESMUTTER & DEOXIDIZER

DESCRIPTION

Diversey No. 500B is a non-chromated, granular desmutter and deoxidizer especially recommended for use in areas where chromated materials cannot be used because of sewage disposal limitations. Diversey No. 500 gives rapid desmutting and deoxidizing on all wrought and extruded aluminum alloys.

Unique Characteristics

1. Diversey No. 500B is a non-chromated desmutter and deoxidizer, that is comparable to chromated desmutters and deoxidizers, and especially recommended where pollution laws require a non-chromated material.

2. Diversey No. 500B has been especially formulated to prevent pitting of the base metal, common to non-chromated desmutters and deoxidizers.

3. Diversey No. 500B is controlled by a simple titration.

Physical Properties

Physical state	-	Free flowing, granular powder
Odor	-	Mild alcohol odor
Color	-	Pale pink to tan
Flammability	-	Non-flammable
Caking	-	Non-caking
Density	-	9.5 lbs./gal.
Wetting	-	Contains no wetting agents
Rinsing	-	Readily rinsable
Foaming	-	Non-foaming

Chemical Properties

Acidity	-	Diversey No. 500B is an acidic material, having a pH of nearly 1 when made up at the normal use concentration of 8-16 oz./gal.
Oxidizing Nature	-	Diversey No. 500B contains an oxidizing agent. The normal precautions applicable to handling oxidizing materials should be observed with this product.

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Chemical Properties (Cont'd.)

Presence of Fluorides	-	Diversey No. 500B contains a fluoride that enhances its desmutting action very markedly. Fluorides are, however, very toxic. Personnel should avoid breathing Diversey No. 500B dust or solution spray.
Absence of Chromium Compounds	-	Diversey No. 500B does not contain any chromium compounds whatsoever. Because it is non-chromated, Diversey No. 500B may be used in applications where chromated materials are forbidden by water pollution laws.

SAFETY PRECAUTIONS

Because of the fluorides and acidic materials present, wear rubber gloves and suitable protective clothing when handling this product. In case of contact with this product or its solution, flush skin or eyes immediately with large volumes of water. If eyes are involved, flush with water for at least 15 minutes and get prompt medical attention.

WHERE TO USE

Desmutting

Diversey No. 500B is primarily designed for general use where rapid, thorough desmutting of aluminum is required after alkaline etching. Diversey No. 500B may also be used to deoxidize most aluminum alloys prior to resistance welding.

Note that Diversey No. 500B is not recommended for desmutting high silicon castings and other aluminum alloys. To desmut such alloys use Diversey 61-62.

Deoxidizing

Diversey No. 500B. is especially recommended for use in those installations where chromated materials cannot be used because of sewage pollution laws in regard to the disposal of waste chromium compounds. The hexavalent chromium present in all chromated desmutters and deoxidizers will harm fish and wildlife if it is introduced into streams. If dumped down the sewer, it poisons the bacteria used in sewage disposal operations. Even a few parts per million of hexavalent chromium is injurious and, for this reason, increasing numbers of localities are placing rigid controls on the disposal of hexavalent chromium.

HOW TO USE

Preparation of the Working Solution

The Diversey No. 500B working solution is normally prepared and used from 8 to 16 oz./gal. at room temperature. The tank should be filled with one-half the required amount of fresh, cold water and the entire required amount of Diversey No. 500B then added with agitation. Water containing a high percentage of iron will significantly reduce bath life. In these cases, use demineralized, deionized or iron-free water. After several minutes of agitation, the balance of the water is added and the solution agitated. The Diversey No. 500B working solution as thus prepared, is milky-white initially but soon becomes yellowish and then changed to a turbid orange-red. Although the solution will become a clear yellow-green or light brown if it is now permitted to stand undisturbed for 2 or 3 hours, this is not necessary -- the Diversey No. 500B working solution may be used as soon as it has been mixed.

There will always be some flocculent reddish material at the bottom of the Diversey No. 500B working solution, along with some insoluble dark brown or red particles. These insoluble materials are all harmless, normal, and may be disregarded. It is worth noting that agitation of the Diversey No. 500B will bring some of the flocculent red material into suspension and thus cause the solution to become turbid and organge-red to red in color. This coloration has no effect upon the operation of the Diversey No. 500B bath.

Use of the Diversey No. 500B Working Solution

Diversey No. 500B is normally use at 8 to 16 oz./gal. at room temperature (70-80°F) for desmutting and for deoxidizing.

A. Desmutting with Diversey NO. 500B

The immersion time required to desmut depends upon the alloy involved and the amount of smut present. Immersion times usually run from 1/4 to 3 minutes in the case of a fresh bath but are somewhat longer for a used bath. Agitation will cut the time required by 25%.

Work should not be treated for any unnecessarily long time as this depletes the solution needlessly. Work that falls to the tank bottom should be removed as soon as possible.

Desmutting with Diversey No. 500B (Cont'd.)

Work should be rinsed thoroughly and immediately after desmutting. A running cold water rinse is recommended.

Procedure A -- Desmutting After ALUMINUX Bath.

1. Preclean in suitable Diversey aluminum cleaner, Diversey No. 19, 6 oz./gal. 180°F.
2. Rinse thoroughly.
3. Etch in ALUMINUX at 6 oz./gal. 150°F for 3 minutes.
4. Cold water running rinse.
5. Deoxidize 5 minutes in Diversey No. 500B at 8-16 oz./gal. room temperature.
6. Rinse with fresh cold water.
7. Cold - air dry.

B. Deoxidizing with Diversey No. 500B

Some specific treatment sequences for use in deoxidizing prior to resistance welding are listed below:

Procedure A -- Deoxidizing Directly After the Pre-Cleaning Step.

This is the simplest procedure that may be used. It gives satisfactory results on most aluminum alloys.

1. Preclean in non-etching aluminum cleaner, 5 minutes, Diversey No. 17A, 19, 909, 6 oz./gal. 180°F.
2. Rinse.
3. Deoxidize 5 minutes in Diversey No. 500B at 8-16 oz./gal. room temperature.
4. Rinse in fresh cold water.
5. Cold air dry (below 120°F).

Procedure B -- Deoxidizing Before and After an ALUMINUX Etch.

This procedure is recommended if heat treated aluminum alloys are to receive a satisfactory appearing etched finish.

Procedure B (Cont'd.)

1. Preclean in non-etching, aluminum cleaner, 5 minutes, Diversey No. 909, 5 oz./gal. 160°F.
2. Rinse.
3. Deoxidize 5 minuts in Diversey No. 500B at 8-16 oz./gal. room temperature.
4. Cold water running rinse.
5. Etch in ALUMINUX at 6 oz./gal. 140°F for 3 minutes.
6. Cold water running rinse.
7. Desmut 2-3 mintues in Diversey No. 500B at 8-16 oz./gal. room temperature.
8. Rinse in fresh cold water.
9. Dry in room temperature air.

Tank Construction

Stainless steel tanks of the 300 series (Type 316 is best) are preferred. Tanks with rigid plastic (polyvinyl chloride, polyethylene) liners are satisfactory. Mild steel tanks of stainless tanks of the 200 or the 400 series are not acceptable. The rinse tank following the Diversey No. 500B desmutting bath should be made of the material previously recommended for the Diversey No. 500B tank.

HOW TO TEST

The concentration of a Diversey No. 500B solution may be determined by the sodium thiosulfate titration.

This method for determining the conentration of Diversey NO. 500B solutions measures the oxidizing material content.

Reagents

1. Potassium Iodide, MI-13.
2. Sulfuric Acid, 1 part reagent grade acid to 4 parts water, MI-14.

DIVERSEY 500B

Reagents (Cont'd.)

3. Starch Indicator Solution, MI-16.

4. 0.1N Sodium Thiosulfate Solution, MI-15.

Equipment

1. 6 cc. graduated dropper pipette.

2. 8 oz. testing bottle.

3. 25 cc. graduated cylinder.

4. 1/2 teaspoon plastic spoon.

5. 1 graduated burett.

PROCEDURE

1. Withdraw 6.2 cc sample of clear Diversey No. 500B solution and place in the 8 oz. testing bottle.

2. Add 50 cc. of water and 1/2 teaspoon of potassium iodide (MI-13). Swirl the testing bottle to dissolve the crystals more rapidly.

3. Add 5 cc. of the diluted sulfuric acid (MI-14) and allow the sample to stand for 2-3 minutes. A deep, red-brown coloration will develop.

4. Titrate with 0.1N sodium thiosulfate (MI-14). The red-brown color of the solution becomes lighter as the titration proceeds and finally disappears. The solution is yellow at this point but turns to green as the end point is approached more closely. Upon reaching the green coloration, add from 3 to 5 cc. of starch indicator solution, and continue the titration slowly now until the blue color of the starch disappears.

Calculation

Total number of cc's of 0.1N sodium thiosulfate solution (MI-15) used equals the concentration of Diversey No. 500B in ounces per gallon.

How Packaged

Diversey No. 500B is packaged 400 lbs. net in polyethylene lined fiber drum.

9/11/74

Diversey Chemicals
INDUSTRIAL DIVISION

technical & operating data

71-3
DIVERSEY NO. 909

POWERFUL ALKALINE CLEANER FOR ALL ALLOYS

Tri Na phosphate
Tri poly pho
Na meta silicate

WHAT IS IT?

Diversey No. 909 is an outstanding caustic-free, heavy duty soak cleaner for ferrous and non-ferrous metals. The excellent wetting, emulsifying and dispersing actions of the product assure maximum effectiveness against a very wide variety of soils.

HOW PACKAGED

300 lbs. in a non-returnable fiber drum.
115 lbs. in a non-returnable fiber drum.

PHYSICAL PROPERTIES

Diversey No. 909 is a white, granular, free-flowing compound. It is non-dusting, readily soluble, and does not cake under normal storage conditions.

CHEMICAL PROPERTIES

Cleaning Action

When used for soak operations, No. 909 is a highly effective cleaner. Penetration of soils takes place immediately. This rapid penetration is promoted by a special wetting action in combination with selected activators. Soils are quickly emulsified and dispersed.

Safety to Metals

Diversey No. 909 generally can be used to clean more reactive metals, such as aluminum, brass, and zinc die castings, in addition to all ferrous metals with excellent results.

Water Conditioning

Advanced water softening prevents hard water deposits from forming on heating coils and sides of the tank. This special water softening action also prevents filming of cleaned work.

Rinsing

The product is free rinsing and drains rapidly in either hard or soft water.

DIVISION OF THE DIVERSEY CORPORATION • 1855 SO. MT. PROSPECT RD. • DES PLAINES, ILL 60018 • (312) 297-7500

Form Approved
Budget Bureau No. 44-R1387
Approval Expires April 30, 1971

Form No. ~~LS6-0018-0~~
May 1969
OSHA-20

U.S. DEPARTMENT OF LABOR

WAGE AND LABOR STANDARDS ADMINISTRATION
Bureau of Labor Standards

MATERIAL SAFETY DATA SHEET

6850-00-LGO-5616

SECTION I

MANUFACTURER'S NAME: DIVERSEY CHEMICALS	EMERGENCY TELEPHONE NO.: (312) 297-7500
ADDRESS (Number, Street, City, State, and ZIP Code): 1855 S. Mt. Prospect Rd, Des Plaines, Illinois 60018	
CHEMICAL NAME AND SYNONYMS	TRADE NAME AND SYNONYMS: Diversey #909
CHEMICAL FAMILY	FORMULA

SECTION II HAZARDOUS INGREDIENTS

PAINTS, PRESERVATIVES, & SOLVENTS	%	TLV (Units)	ALLOYS AND METALLIC COATINGS	%	TLV (Units)
PIGMENTS			BASE METAL		
CATALYST			ALLOYS		
VEHICLE			METALLIC COATINGS		
SOLVENTS			FILLER METAL PLUS COATING OR CORE FLUX		
ADDITIVES			OTHERS		
OTHERS					

HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS, OR GASES	%	TLV (Units)

SECTION III PHYSICAL DATA

BOILING POINT (°F.)	N/A	SPECIFIC GRAVITY (H_2O=1)	
VAPOR PRESSURE (mm Hg.)	N/A	PERCENT VOLATILE BY VOLUME (%)	
VAPOR DENSITY (AIR=1)	N/A	EVAPORATION RATE (=1)	
SOLUBILITY IN WATER	Complete		
APPEARANCE AND ODOR	Off-white granular material with slight soap-like odor.		

SECTION IV FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method used): None.	FLAMMABLE LIMITS	Lel	Uel
EXTINGUISHING MEDIA			
SPECIAL FIRE FIGHTING PROCEDURES			
UNUSUAL FIRE AND EXPLOSION HAZARDS			

SECTION V: HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE

EFFECTS OF OVEREXPOSURE

EMERGENCY AND FIRST AID PROCEDURES
Skin - Rinse with water. Eyes - Flush with plenty of water for at least 15 minutes. Call or see a physician. Internal - Give water or milk. Follow with dilute vinegar or fruit juice. Call a physician.

SECTION VI: REACTIVITY DATA

STABILITY	UNSTABLE		CONDITIONS TO AVOID
	STABLE	X	

INCOMPATABILITY *(Materials to avoid)*

HAZARDOUS DECOMPOSITION PRODUCTS

HAZARDOUS POLYMERIZATION	MAY OCCUR		CONDITIONS TO AVOID
	WILL NOT OCCUR	X	

SECTION VII: SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED
Remove damaged container. Sweep up spillage. Rinse area with water.

WASTE DISPOSAL METHOD

SECTION VIII: SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION *(Specify type)*

VENTILATION	LOCAL EXHAUST	X	SPECIAL
	MECHANICAL *(General)*		OTHER

PROTECTIVE GLOVES: Rubber

EYE PROTECTION: Goggles or Face Shield

OTHER PROTECTIVE EQUIPMENT

SECTION IX: SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING

OTHER PRECAUTIONS

Safety Data Sheet

DIVISION OF THE DIVERSEY CORPORATION • 1855 SO. MT. PROSPECT RD. • DES PLAINES, ILL. 60018 • (312) 297-7500

TOXICOLOGICAL AND SAFE HANDLING INFORMATION FOR

DIVERSEY NO. 909

PHYSICAL AND CHEMICAL PROPERTIES

1. Form solid 2. Color off-white 3. Appearance granular

4. Odor slight soap-like 5. Density 8.1 lbs./gal.

6. pH (Concentrate) ---- Use Solution 11.0-11.5 7. Boiling point -- °F (°C)

8. Corrosive Action on Materials Checked:

☐Aluminum	☐Magnesium	☐Plexiglas	☐Rubber
☐Lacquers	☐Enamels	☐Fabrics	☐Plastics
☐Ferrous Metals	☐Stainless Steel	☐Other	

SPECIAL HANDLING PROCEDURES

1. Spill and leakage
   Remove damaged container. Sweep up spillage. Rinse area clean with water.

2. Storage

3. Recommended protective equipment
   Goggles or face shield, rubber gloves.

4. Precautions for normal use

5. Container Requirement (Repackaging)
   Polyethylene, polyethylene lined fiber drum, steel

6. Disposal Recommendations:
   Material (CAN) be disposed of safely through normal means, such as in trash, drains, etc.
   Material must be disposed of as follows:

PHYSIOLOGICAL PROPERTIES

HAZARD CLASS: ☐ Toxic ☐ Irritant ☐ Flammable
☐ Explosive ☐ Corrosive ☐ Innocuous

If rated toxic or irritant, the mechanism is:

☐ Oral ingestion ☐ Inhalation ☐ Skin absorption ☐ Other _____

Description Of:

A. Acute Oral Toxicity - Severe irritation to burns of mucous membranes of mouth, throat and stomach.

B. Local Effects Upon Eyes
Irritation to severe irritation.

C. Local Effects Upon Skin
Irritation possible.

D. Estimate of Acute Hazard By Inhalation

E. Warning Properties (Odor, Irritation to Eyes, Nose, or Throat)

HAZARD DATA

1. Flash point none °F (°C) ☐ Open Cup ☐ Closed Cup

2. Explosive Limits none Lower Upper 3. Firepoint °F (°C)

4. Auto Ignition Point °F (°C) none

5. Incompatibility (material to avoid)

6. Hazardous decomposition products (if any)

7. Effect of direct sunlight , heat, water

8. Suitable extinguishing agents

FIRST AID AND EMERGENCY PROCEDURES

First Aid Treatment

A. Skin Contact
Rinse with water.

B. Eye Contact
Flush with plenty of water. for at least 15 minutes. Call or see a physician.

C. Inhalation

D. Antidote in Case of Swallowing
Give water or milk. Follow with dilute vinegar or fruit juices. Call or see a physician.

National Chemicals Incorporated
PO Box 32 ◥ 105 Liberty Street ◥ Winona, MN 55987 ◥ Phone: 800-533-0027 or 507-454-5640 ◥ Fax: 507-454-5641

FOR CHEMICAL EMERGENCY
Involving Shipping and Handling Spills, Leak, Fire, Exposure or Accident
Call CHEMTREC 1-800-424-9300

Complies with OSHA's Hazard Communication Standard 29 CFR 1910.1200

Section 1 - Product Identification

Product Name: Sodium Metasilicate, all sizes Product ID: 0204X

Section 2 - Composition/Information on Ingredients

CHEMICAL AND COMMON NAME	CAS REG. #	WT. %	OSHA PEL	ACGIH TLV
Silicic acid, disodium salt; Disodium trioxosilicate; Anhydrous Sodium metasilicate; ASM	6834-92-0	apprx. 100%	N/E*	N/E*

* Manufacturer's recommended exposure limit is 2 mg/m3 Ceiling Limit.

Section 3 - Hazards Identification

EMERGENCY OVERVIEW: White, odorless, granular powder. Corrosive to eyes, skin, and digestive tract. Dust corrosive to respiratory tract. Due to high pH of product, release into surface water is harmful to aquatic life. Noncombustible. Reacts with acids and some organics.

EYE CONTACT: Corrosive. Causes eye burns.

SKIN CONTACT: Corrosive. Causes skin burns.

INHALATION: Dust corrosive to respiratory tract.

INGESTION: Corrosive. Causes burns to mouth, esophagus, and stomach.

CHRONIC HAZARDS: No known chronic hazards. Not listed by NTP, IARC or OSHA as a carcinogen.

PHYSICAL HAZARDS: Can etch glass if not promptly removed.

Section 4 - First Aid Measures

EYES: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention.

SKIN: In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention immediately. Wash clothing before reuse. Thoroughly clean shoes before reuse.

INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

INGESTION: If swallowed, DO NOT induce vomiting. Get medical attention immediately. If victim is fully conscious, give a cupful of water. Never give anything by mouth to an unconscious person.

Section 5 - Fire Fighting Measures

FLAMMABLE LIMITS: This material is noncombustible.

EXTINGUISHING MEDIA: This material is compatible with all extinguishing media. Hazards to fire-fighters: See Section 3 for information on hazards when this material is present in the area of a fire.

FIRE-FIGHTING EQUIPMENT: The following protective equipment for fire fighters is recommended when this material is present in the area of a fire: chemical goggles, body-covering protective clothing, chemical resistant gloves, and rubber boots.

Section 6 - Accidental Release Measures

PERSONNEL PROTECTION: Wear chemical goggles, body-covering protective clothing, chemical resistant gloves, and rubber boots, NIOSH-approved dust respirator where dust occurs. See Section 8.

ENVIRONMENTAL HAZARDS: Sinks and mixes with water. High pH of this material is harmful to aquatic life, see Section 12.

SMALL SPILL CLEANUP: Carefully shovel or sweep up spilled material and place in suitable container. Avoid generating dust. Use appropriate Personal Protective Equipment (PPE). See Section 8.

LARGE SPILL CLEANUP: Keep unnecessary people away; isolate hazard area and deny entry. Do not touch or walk through spilled material. Carefully shovel or sweep up spilled material and place in suitable container. Avoid generating dust. Use appropriate PERSONAL PROTECTIVE EQUIPMENT (PPE). See section 8. In case of contact with water, prevent runoff from entering

into storm sewers and ditches which lead to natural waterways. Neutralize contaminated area and flush with large quantities of water. Comply with applicable environmental regulations.

CERCLA RQ: There is no CERCLA Reportable Quantity for this material. If a spill goes off site, notification of state and local authorities is recommended.

Section 7 - Handling and Storage

HANDLING: Do not get in eyes, on skin, or on clothing. Do not breathe dust. Keep container closed. Promptly clean up spills. Wash thoroughly after handling.

STORAGE: Keep containers closed. Store in clean, tightly closed steel, fiber, or plastic containers. Separate from acids, reactive metals, and ammonium salts. Do not store in aluminum, fiberglass, copper, brass, zinc or galvanized containers. This product can absorb water from the air. In case of high humidity or storage for extended periods of time, use plastic bags to enclose product containers to avoid caking. Packaged inventory should be used on a first in, first out (FIFO) basis.

Section 8 - Exposure Controls and Personal Protection

ENGINEERING CONTROLS: Use only with adequate ventilation. Keep containers closed. Safety shower and eyewash fountain should be within direct access.

RESPIRATORY PROTECTION: Use a NIOSH-approved dust respirator where dust occurs. Observe OSHA regulations for respirator use (29 C.F.R. S1910.134)

SKIN PROTECTION: Wear body-covering protective clothing and gloves.

EYE PROTECTION: Wear chemical goggles.

Section 9 - Physical and Chemical Properties

APPEARANCE: Granular powder

COLOR: White

ODOR: Odorless or musty odor

pH: Approximately 14

BULK DENSITY: Approximately 68 lbs/ft3 untamped, 77 lbs/ft3 tamped

SOLUBILITY IN WATER: Soluble

Section 10 - Stability and Reactivity

STABILITY: This material is stable under all conditions of use and storage.

CONDITIONS TO AVOID: None

MATERIALS TO AVOID: Generates heat when mixed with acid. May react with ammonium salt solutions resulting in evolution of ammonia gas. Flammable hydrogen gas may be produced on contact with aluminum, tin, lead, and zinc. Carbon monoxide gas may be produced on contact with reducing sugars.

HAZARDOUS DECOMPOSITION: Hydrogen

Section 11 - Toxicological Information

ACUTE DATA: This material has not been tested for primary eye irritation potential. However, on the basis of its high degree of alkalinity, it is regarded as corrosive to the eyes. When this material was tested for skin corrosion/irritation potential according to OECD Guidelines Section 404, it produced dermal corrosion. The acute oral toxicity of this product has not been tested. When sodium silicates were tested on a 100% solids basis, their single dose acute oral LD50 in rats ranged from 1500 mg/kg to 3200 mg/kg. The acute oral lethality resulted from nonspecific causes.

SUBCHRONIC DATA: In a study of rats fed sodium silicate in drinking water for three months, at 200, 600 and 1800 ppm, changes were reported in the blood chemistry of some animals, but no specific changes to the organs of the animals due to sodium silicate administration were observed in any of the dosage groups. Another study reported adverse effects to the kidneys of dogs fed sodium silicate in their diet at 2.4g/kg/day for 4 weeks, whereas rats fed the same dosage did not develop any treatment-related effects. Decreased numbers of births and survival to weaning was reported for rats fed sodium silicate in their drinking water at 600 and 1200 ppm.

SPECIAL STUDIES: Sodium silicate was not mutagenic to the bacterium E. Coli when tested in a mutagenicity bioassay. There are no known reports of carcinogenicity of sodium silicates. Frequent ingestion over extended periods of time of gram quantities of silicates is associated with the formation kidney stones and other siliceous urinary calculi in humans. Sodium silicate is not listed by IARC, NTP or OSHA as a carcinogen.

Section 12 -Ecological Information

ECO TOXICITY: The following data is reported for sodium silicates on a 100% solids basis: A 96 hour median tolerance for fish (Gambusia affnis) of 2320 ppm; a 96 hour median tolerance for water fleas (Daphnia magna) of 247 ppm; a 96 hour median tolerance for snail eggs (Lymnea) of 632 ppm; and a 96 hour median tolerance for Amphipoda of 160 ppm.

ENVIRONMENTAL FATE: This material is not persistent in aquatic systems, but its high pH when undiluted or unneutralized is acutely harmful to aquatic life. Diluted material yields dissolved silica in a form that is indistinguishable from natural dissolved silica. It does not contribute to BOD. This material does not bioaccumulate except in species that use silica as a structural material such as diatoms and siliceous sponges. Where abnormally low natural silica concentrations exist (less than 0.1 ppm), dissolved silica may be a limiting nutrient for diatoms and a few other aquatic algal species. However, the addition of excess dissolved silica over the limiting concentration will not stimulate the growth of diatom populations; their growth rate is independent of silica concentration once the limiting concentration is exceeded. Neither silica nor sodium will appreciably bioconcentrate up the food chain.

PHYSICAL/CHEMICAL: Sinks and dissolves in water.

Section 13 - Disposal Considerations

CLASSIFICATION: Disposed dry/solid material is not classified as a RCRA Hazardous waste. However, disposed water/wet solutions containing this material are classified as RCRA hazardous waste if they exhibit the corrosive characteristic (pH greater than or equal to12.5) as defined in EPA rules at 40 C.F.R. S261.22 (a)(1).

DISPOSAL METHOD: Dispose in accordance with federal, state and local regulations.

Section 14 - Transport Information

DOT UN STATUS: This material is a regulated hazardous material.

UN PROPER SHIPPING NAME: Corrosive Solid, Basic, Inorganic, n.o.s. (Sodium metasilicate, Anhydrous)

UN HAZARD CLASS/DIVISION: 8

UN IDENTIFICATION NUMBER: UN3262

UN PACKING GROUP: PG II

Section 15 - Regulations

CERCLA: No CERCLA Reportable Quantity has been established for this material.

SARA TITLE III: Not an Extremely Hazardous Substance under S302. Not a Toxic Chemical under S313. Hazard Categories under SS311/312: Acute

TSCA: All ingredients of this material are listed on the TSCA inventory.

FDA: The use of sodium metasilicate is authorized by FDA as a boiler water additive for the production of steam that will contact food pursuant to 21 CFR S173.310; and as a GRAS substance pursuant to 21 CFR S184.1769a for use in washing and lye peeling of fruits, vegetables, and nuts; as a denuding agent for tripe; a hog scald agent in removing hair; and as a corrosion preventative in canned and bottled water.

Section 16 - Other Information

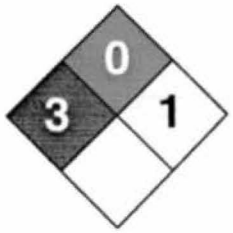
SUPERCEDES DATE:

ABBREVIATIONS:	< = LESS THAN	> = MORE THAN	UNK = UNKNOWN
	N/A = NOT APPLICABLE	N/D = NOT DETERMINED	N/E = NOT ESTABLISHED

FOR CHEMICAL EMERGENCY

Involving Shipping and Handling Spills, Leak, Fire, Exposure or Accident

Call CHEMTREC 1-800-424-9300



Health	3
Fire	0
Reactivity	2
Personal Protection	J

Material Safety Data Sheet
Sodium hydroxide MSDS

Section 1: Chemical Product and Company Identification

Product Name: Sodium hydroxide

Catalog Codes: SLS3298, SLS1081, SLS2503, SLS3925, SLS1705

CAS#: 1310-73-2

RTECS: WB4900000

TSCA: TSCA 8(b) inventory: Sodium hydroxide

CI#: Not available.

Synonym: Caustic Soda

Chemical Name: Sodium Hydroxide

Chemical Formula: NaOH

Contact Information:

Sciencelab.com, Inc.
14025 Smith Rd.
Houston, Texas 77396

US Sales: **1-800-901-7247**
International Sales: **1-281-441-4400**

Order Online: ScienceLab.com

CHEMTREC (24HR Emergency Telephone), call: 1-800-424-9300

International CHEMTREC, call: 1-703-527-3887

For non-emergency assistance, call: 1-281-441-4400

Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #	% by Weight
Sodium hydroxide	1310-73-2	100

Toxicological Data on Ingredients: Sodium hydroxide LD50: Not available. LC50: Not available.

Section 3: Hazards Identification

Potential Acute Health Effects:
Very hazardous in case of skin contact (corrosive, irritant, permeator), of eye contact (irritant, corrosive), of ingestion, of inhalation. The amount of tissue damage depends on length of contact. Eye contact can result in corneal damage or blindness. Skin contact can produce inflammation and blistering. Inhalation of dust will produce irritation to gastro-intestinal or respiratory tract, characterized by burning, sneezing and coughing. Severe over-exposure can produce lung damage, choking, unconsciousness or death. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering.

Potential Chronic Health Effects:
CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Mutagenic for mammalian somatic cells. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. The substance may be toxic to mucous membranes, upper respiratory tract, skin, eyes. Repeated or prolonged exposure to the substance can produce target organs damage. Repeated exposure of the eyes to a low level of dust can produce eye irritation. Repeated skin exposure can produce local skin destruction, or dermatitis. Repeated inhalation of dust can produce varying degree of respiratory irritation or lung damage.

Section 4: First Aid Measures

Eye Contact:
Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention immediately.

Skin Contact:
In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Cover the irritated skin with an emollient. Cold water may be used.Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.

Serious Skin Contact:
Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek medical attention.

Inhalation:
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.

Serious Inhalation:
Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. WARNING: It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled material is toxic, infectious or corrosive. Seek immediate medical attention.

Ingestion:
Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.

Serious Ingestion: Not available.

Section 5: Fire and Explosion Data

Flammability of the Product: Non-flammable.

Auto-Ignition Temperature: Not applicable.

Flash Points: Not applicable.

Flammable Limits: Not applicable.

Products of Combustion: Not available.

Fire Hazards in Presence of Various Substances: metals

Explosion Hazards in Presence of Various Substances:
Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available. Slightly explosive in presence of heat.

Fire Fighting Media and Instructions: Not available

Special Remarks on Fire Hazards:
sodium hydroxide + zinc metal dust causes ignition of the latter. Under proper conditions of temperature, pressure and state of division, it can ignite or react violently with acetaldehyde, ally alcohol, allyl chloride, benzene-1,4-diol, chlorine trifluoride, 1,2 dichlorethylene, nitroethane, nitromethane, nitroparaffins, nitropropane, cinnamaldehyde, 2,2-dichloro-3,3-dimethylbutane. Sodium hydroxide in contact with water may generate enough heat to ignite adjacent combustible materials. Phosphorous boiled with NaOH yields mixed phosphines which may ignite spontanously in air. sodium hydroxide and cinnamaldehyde + heat may cause ignition. Reaction with certain metals releases flammable and explosive hydrogen gas.

Special Remarks on Explosion Hazards:
Sodium hydroxide reacts to form explosive products with ammonia + silver nitrate. Benzene extract of allyl benzenesulfonate prepared from allyl alcohol, and benzene sulfonyl chloride in presence of aquesous sodium hydroxide, under vacuum distillation, residue darkened and exploded. Sodium Hydroxde + impure tetrahydrofuran, which can contain peroxides, can

cause serious explosions. Dry mixtures of sodium hydroxide and sodium tetrahydroborate liberate hydrogen explosively at 230-270 deg. C. Sodium Hydroxide reacts with sodium salt of trichlorophenol + methyl alcohol + trichlorobenzene + heat to cause an explosion.

Section 6: Accidental Release Measures

Small Spill:
Use appropriate tools to put the spilled solid in a convenient waste disposal container. If necessary: Neutralize the residue with a dilute solution of acetic acid.

Large Spill:
Corrosive solid. Stop leak if without risk. Do not get water inside container. Do not touch spilled material. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed. Call for assistance on disposal. Neutralize the residue with a dilute solution of acetic acid. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

Section 7: Handling and Storage

Precautions:
Keep container dry. Do not breathe dust. Never add water to this product. In case of insufficient ventilation, wear suitable respiratory equipment. If you feel unwell, seek medical attention and show the label when possible. Avoid contact with skin and eyes. Keep away from incompatibles such as oxidizing agents, reducing agents, metals, acids, alkalis, moisture.

Storage: Keep container tightly closed. Keep container in a cool, well-ventilated area. Hygroscopic. Deliquescent.

Section 8: Exposure Controls/Personal Protection

Engineering Controls:
Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Personal Protection:
Splash goggles. Synthetic apron. Vapor and dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

Personal Protection in Case of a Large Spill:
Splash goggles. Full suit. Vapor and dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits:
STEL: 2 (mg/m3) from ACGIH (TLV) [United States] TWA: 2 CEIL: 2 (mg/m3) from OSHA (PEL) [United States] CEIL: 2 (mg/m3) from NIOSHConsult local authorities for acceptable exposure limits.

Section 9: Physical and Chemical Properties

Physical state and appearance: Solid. (Deliquescent solid.)

Odor: Odorless.

Taste: Not available.

Molecular Weight: 40 g/mole

Color: White.

pH (1% soln/water): 13.5 [Basic.]

Boiling Point: 1388°C (2530.4°F)

Melting Point: 323°C (613.4°F)

Critical Temperature: Not available.

Specific Gravity: 2.13 (Water = 1)

Vapor Pressure: Not applicable.

Vapor Density: Not available.

Volatility: Not available.

Odor Threshold: Not available.

Water/Oil Dist. Coeff.: Not available.

Ionicity (in Water): Not available.

Dispersion Properties: See solubility in water.

Solubility: Easily soluble in cold water.

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Incompatible materials, moisture, moist air

Incompatibility with various substances:
Highly reactive with metals. Reactive with oxidizing agents, reducing agents, acids, alkalis, moisture.

Corrosivity: Not available.

Special Remarks on Reactivity:
Hygroscopic. Much heat is evolved when solid material is dissolved in water. Therefore cold water and caution must be used for this process. Sodium hydroxide solution and octanol + diborane during a work-up of a reaction mixture of oxime and diborane in tetrahyrofuran is very exothermic, a mild explosion being noted on one occassion. Reactive with water, acids (mineral, non-oxidizing, e.g. hydrochloric, hydrofluoric acid, muriatic acid, phosphoric), acids (mineral, oxidizing e.g. chromic acid, hypochlorous acid, nitric acid, sulfuric acid), acids (organic e.g. acetic acid, benzoic acid, formic acid, methanoic acid, oxalic acid), aldehydes (e.g. acetaldehyde, acrolein, chloral hydrate, foraldehyde), carbamates (e.g. carbanolate, carbofuran), esters (e.g. butyl acetate, ethyl acetate, propyl formate), halogenated organics (dibromoethane, hexachlorobenzene, methyl chloride, trichloroethylene), isocyanates (e.g. methyl isocyanate), ketones (acetone, acetophenone, MEK, MIBK), acid chlorides, strong bases, strong oxidizing agents, strong reducing agents, flammable liquids, powdered metals and metals (i.e aluminum, tin, zinc, hafnium, raney nickel), metals (alkali and alkaline e.g. cesium, potassium, sodium), metal compounds (toxic e.g. berylium, lead acetate, nickel carbonyl, tetraethyl lead), mitrides (e.g. potassium nitride, sodium nitride), nitriles (e.g. acetonitrile, methyl cyanide), nitro compounds (organic e.g. nitrobenzene, nitromethane), acetic anhydride, chlorohydrin, chlorosulfonic acid, ethylene cyanohydrin, glyoxal, hydrosulfuric acid, oleum, propiolactone, acylonitrile, phorosous pentoxide, chloroethanol, chloroform-methanol, tetrahydroborate, cyanogen azide, 1,2,4,5 tetrachlorobenzene, cinnamaldehyde. Reacts with formaldehyde hydroxide to yield formic acid, and hydrogen.

Special Remarks on Corrosivity: Very caustic to aluminum and other metals in presence of moisture.

Polymerization: Will not occur.

Section 11: Toxicological Information

Routes of Entry: Absorbed through skin. Dermal contact. Eye contact. Inhalation. Ingestion.

Toxicity to Animals:
LD50: Not available. LC50: Not available.

Chronic Effects on Humans:
MUTAGENIC EFFECTS: Mutagenic for mammalian somatic cells. May cause damage to the following organs: mucous membranes, upper respiratory tract, skin, eyes.

Other Toxic Effects on Humans:
Extremely hazardous in case of inhalation (lung corrosive). Very hazardous in case of skin contact (corrosive, irritant, permeator), of eye contact (corrosive), of ingestion, .

Special Remarks on Toxicity to Animals:
Lowest Published Lethal Dose: LDL [Rabbit] - Route: Oral; Dose: 500 mg/kg

Special Remarks on Chronic Effects on Humans: May affect genetic material. Investigation as a mutagen (cytogenetic analysis)

Special Remarks on other Toxic Effects on Humans:

Section 12: Ecological Information

Ecotoxicity: Not available.

BOD5 and COD: Not available.

Products of Biodegradation:
Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The product itself and its products of degradation are not toxic.

Special Remarks on the Products of Biodegradation: Not available.

Section 13: Disposal Considerations

Waste Disposal:
Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14: Transport Information

DOT Classification: Class 8: Corrosive material

Identification: : Sodium hydroxide, solid UNNA: 1823 PG: II

Special Provisions for Transport: Not available.

Section 15: Other Regulatory Information

Federal and State Regulations:
Illinois toxic substances disclosure to employee act: Sodium hydroxide Illinois chemical safety act: Sodium hydroxide New York release reporting list: Sodium hydroxide Rhode Island RTK hazardous substances: Sodium hydroxide Pennsylvania RTK: Sodium hydroxide Minnesota: Sodium hydroxide Massachusetts RTK: Sodium hydroxide New Jersey: Sodium hydroxide Louisiana spill reporting: Sodium hydroxide California Director's List of Hazardous Substances: Sodium hydroxide TSCA 8(b) inventory: Sodium hydroxide CERCLA: Hazardous substances.: Sodium hydroxide: 1000 lbs. (453.6 kg)

Other Regulations:
OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200). EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances.

Other Classifications:

WHMIS (Canada): CLASS E: Corrosive solid.

DSCL (EEC):
R35- Causes severe burns. S26- In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S37/39- Wear suitable gloves and eye/face protection. S45- In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

HMIS (U.S.A.):

Health Hazard: 3

Fire Hazard: 0

Reactivity: 2

Personal Protection: j

National Fire Protection Association (U.S.A.):

Health: 3

Flammability: 0

Reactivity: 1

Specific hazard:

Protective Equipment:
Gloves. Synthetic apron. Vapor and dust respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Splash goggles.

Section 16: Other Information

References: Not available.

Other Special Considerations: Not available.

Created: 10/09/2005 06:32 PM

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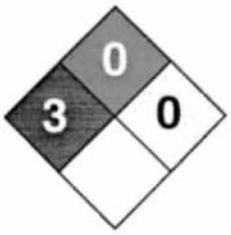


Health	3
Fire	0
Reactivity	0
Personal Protection	E

Material Safety Data Sheet
Cadmium chloride MSDS

Section 1: Chemical Product and Company Identification

Product Name: Cadmium chloride

Catalog Codes: SLC4060

CAS#: 7790-78-5

RTECS: EV0175000

TSCA: TSCA 8(b) inventory: Cadmium chloride

CI#: Not available.

Synonym:

Chemical Name: Not available.

Chemical Formula: CdCl2.2-1/2 H2O

Contact Information:

Sciencelab.com, Inc.
14025 Smith Rd.
Houston, Texas 77396

US Sales: **1-800-901-7247**
International Sales: **1-281-441-4400**

Order Online: ScienceLab.com

CHEMTREC (24HR Emergency Telephone), call:
1-800-424-9300

International CHEMTREC, call: 1-703-527-3887

For non-emergency assistance, call: 1-281-441-4400

Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #	% by Weight
Cadmium chloride	7790-78-5	100

Toxicological Data on Ingredients: Cadmium chloride: ORAL (LD50): Acute: 88 mg/kg [Rat]. 63 mg/kg [Guinea pig].

Section 3: Hazards Identification

Potential Acute Health Effects:
Very hazardous in case of ingestion. Slightly hazardous in case of skin contact (irritant), of eye contact (irritant), of inhalation. Severe over-exposure can result in death.

Potential Chronic Health Effects:
Very hazardous in case of ingestion. Slightly hazardous in case of skin contact (irritant), of eye contact (irritant), of inhalation. CARCINOGENIC EFFECTS: Classified 2A (Probable for human.) by IARC, 2 (Reasonably anticipated.) by NTP. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: PROVEN The substance is toxic to blood, kidneys, the reproductive system, liver, mucous membranes. Repeated or prolonged exposure to the substance can produce target organs damage. Repeated exposure to an highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.

Section 4: First Aid Measures

Eye Contact: Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Cold water may be used.

Skin Contact:
After contact with skin, wash immediately with plenty of water. Gently and thoroughly wash the contaminated skin with running water and non-abrasive soap. Be particularly careful to clean folds, crevices, creases and groin. Cold water may be used. Cover the irritated skin with an emollient. If irritation persists, seek medical attention.

Serious Skin Contact: Not available.

Inhalation: Allow the victim to rest in a well ventilated area. Seek immediate medical attention.

Serious Inhalation:
Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek medical attention.

Ingestion:
Do not induce vomiting. Examine the lips and mouth to ascertain whether the tissues are damaged, a possible indication that the toxic material was ingested; the absence of such signs, however, is not conclusive. Loosen tight clothing such as a collar, tie, belt or waistband. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek immediate medical attention.

Serious Ingestion: Not available.

Section 5: Fire and Explosion Data

Flammability of the Product: Non-flammable.

Auto-Ignition Temperature: Not applicable.

Flash Points: Not applicable.

Flammable Limits: Not applicable.

Products of Combustion: Not available.

Fire Hazards in Presence of Various Substances: Not applicable.

Explosion Hazards in Presence of Various Substances:
Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.

Fire Fighting Media and Instructions: Not applicable.

Special Remarks on Fire Hazards: Not available.

Special Remarks on Explosion Hazards: Not available.

Section 6: Accidental Release Measures

Small Spill: Use appropriate tools to put the spilled solid in a convenient waste disposal container.

Large Spill:
Use a shovel to put the material into a convenient waste disposal container. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

Section 7: Handling and Storage

Precautions:
Keep locked up Do not ingest. Do not breathe dust. Wear suitable protective clothing If ingested, seek medical advice immediately and show the container or the label.

Storage:
Keep container tightly closed. Keep in a cool, well-ventilated place. Highly toxic or infectious materials should be stored in a separate locked safety storage cabinet or room.

Section 8: Exposure Controls/Personal Protection

Engineering Controls:
Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Personal Protection: Safety glasses. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

Personal Protection in Case of a Large Spill:
Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits: TWA: 0.05 STEL: 0.2 (mg/m3) from ACGIHConsult local authorities for acceptable exposure limits.

Section 9: Physical and Chemical Properties

Physical state and appearance: Solid. (Crystals solid.)

Odor: Odorless.

Taste: Not available.

Molecular Weight: 228.35 g/mole

Color: Colorless.

pH (1% soln/water): Not available.

Boiling Point: Not available.

Melting Point: Decomposes.

Critical Temperature: Not available.

Specific Gravity: 3.327 (Water = 1)

Vapor Pressure: Not applicable.

Vapor Density: Not available.

Volatility: Not available.

Odor Threshold: Not available.

Water/Oil Dist. Coeff.: Not available.

Ionicity (in Water): Not available.

Dispersion Properties: See solubility in water, acetone.

Solubility:
Easily soluble in cold water. Soluble in acetone.

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Not available.

Incompatibility with various substances: Not available.

Corrosivity: Non-corrosive in presence of glass.

Special Remarks on Reactivity: Not available.

Special Remarks on Corrosivity: Not available.

Polymerization: No.

Section 11: Toxicological Information

Routes of Entry: Ingestion.

Toxicity to Animals: Acute oral toxicity (LD50): 63 mg/kg [Guinea pig].

Chronic Effects on Humans:
CARCINOGENIC EFFECTS: Classified 2A (Probable for human.) by IARC, 2 (Reasonably anticipated.) by NTP.
DEVELOPMENTAL TOXICITY: PROVEN The substance is toxic to blood, kidneys, the reproductive system, liver, mucous membranes.

Other Toxic Effects on Humans:
Very hazardous in case of ingestion. Slightly hazardous in case of skin contact (irritant), of inhalation.

Special Remarks on Toxicity to Animals: Not available.

Special Remarks on Chronic Effects on Humans: Not available.

Special Remarks on other Toxic Effects on Humans: Not available.

Section 12: Ecological Information

Ecotoxicity: Not available.

BOD5 and COD: Not available.

Products of Biodegradation:
Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The products of degradation are more toxic.

Special Remarks on the Products of Biodegradation: Not available.

Section 13: Disposal Considerations

Waste Disposal:

Section 14: Transport Information

DOT Classification: CLASS 6.1: Poisonous material.

Identification: : Cadmium compound, n.o.s. (Cadmium chloride) : UN2570 PG: III

Special Provisions for Transport: Marine Pollutant

Section 15: Other Regulatory Information

Federal and State Regulations:
California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer, birth defects or other reproductive harm, which would require a warning under the statute: Cadmium chloride California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer which would require a warning under the statute: Cadmium chloride TSCA 8(b) inventory: Cadmium chloride

Other Regulations: OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200).

Other Classifications:

WHMIS (Canada):
CLASS D-1B: Material causing immediate and serious toxic effects (TOXIC). CLASS D-2A: Material causing other toxic effects (VERY TOXIC).

DSCL (EEC):
R45- May cause cancer. R48/25- Toxic: danger of serious damage to health in case of prolonged exposure if swallowed.

HMIS (U.S.A.):

Health Hazard: 3

Fire Hazard: 0

Reactivity: 0

Personal Protection: E

National Fire Protection Association (U.S.A.):

Health: 3

Flammability: 0

Reactivity: 0

Specific hazard:

Protective Equipment:
Gloves. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Safety glasses.

Section 16: Other Information

References: Not available.

Other Special Considerations: Not available.

Created: 10/11/2005 11:30 AM

Last Updated: 11/01/2010 12:00 PM

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall ScienceLab.com be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if ScienceLab.com has been advised of the possibility of such damages.

Health	2
Fire	0
Reactivity	1
Personal Protection	E

Material Safety Data Sheet
Sodium carbonate MSDS

Section 1: Chemical Product and Company Identification

Product Name: Sodium carbonate

Catalog Codes: SLS3481, SLS1264, SLS4105, SLS1894, SLS3316

CAS#: 497-19-8

RTECS: VZ4050000

TSCA: TSCA 8(b) inventory: Sodium carbonate

CI#: Not available.

Synonym: Crystal Carbonate, Disodium Carbonate, Sal Soda, Soda Asha, Washing Soda

Chemical Name: Sodium Carbonate, Anhydrous

Chemical Formula: Na2-C-O3

Contact Information:

Sciencelab.com, Inc.
14025 Smith Rd.
Houston, Texas 77396

US Sales: **1-800-901-7247**
International Sales: **1-281-441-4400**

Order Online: ScienceLab.com

CHEMTREC (24HR Emergency Telephone), call: 1-800-424-9300

International CHEMTREC, call: 1-703-527-3887

For non-emergency assistance, call: 1-281-441-4400

Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #	% by Weight
Sodium carbonate	497-19-8	100

Toxicological Data on Ingredients: Sodium carbonate: ORAL (LD50): Acute: 4090 mg/kg [Rat]. 6600 mg/kg [Mouse]. DUST (LC50): Acute: 2300 mg/m 2 hours [Rat]. 1200 mg/m 2 hours [Mouse].

Section 3: Hazards Identification

Potential Acute Health Effects: Hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation (lung irritant).

Potential Chronic Health Effects:
Slightly hazardous in case of skin contact (sensitizer). CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. The substance may be toxic to upper respiratory tract, skin, eyes. Repeated or prolonged exposure to the substance can produce target organs damage.

Section 4: First Aid Measures

Eye Contact:
Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention.

Skin Contact:
In case of contact, immediately flush skin with plenty of water. Cover the irritated skin with an emollient. Remove contaminated clothing and shoes. Cold water may be used.Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.

Serious Skin Contact:
Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek immediate medical attention.

Inhalation:
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Serious Inhalation: Not available.

Ingestion:
Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms appear.

Serious Ingestion: Not available.

Section 5: Fire and Explosion Data

Flammability of the Product: Non-flammable.

Auto-Ignition Temperature: Not applicable.

Flash Points: Not applicable.

Flammable Limits: Not applicable.

Products of Combustion: Emits Na2O fumes when heated to decompositon.

Fire Hazards in Presence of Various Substances: Not applicable.

Explosion Hazards in Presence of Various Substances:
Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.

Fire Fighting Media and Instructions: Not applicable.

Special Remarks on Fire Hazards:
Sodium carbonate can ignite and burn fiercely in contact with fluoride. Sodium Carbonate in contact with fluorine decomposed at ordinary temperature with incandescence.

Special Remarks on Explosion Hazards:
Reacts explosively with red-hot aluminum metal. Sodium carbonate + ammonia in arabic gum solution will explode.

Section 6: Accidental Release Measures

Small Spill:
Use appropriate tools to put the spilled solid in a convenient waste disposal container. If necessary: Neutralize the residue with a dilute solution of acetic acid. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.

Large Spill:
Use a shovel to put the material into a convenient waste disposal container. Neutralize the residue with a dilute solution of acetic acid. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system.

Section 7: Handling and Storage

Precautions:
Do not ingest. Do not breathe dust. Wear suitable protective clothing. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles such as acids.

Storage:
Hygroscopic. Keep container tightly closed. Keep container in a cool, well-ventilated area. Do not store above 24°C (75.2°F). Hygroscopic

Section 8: Exposure Controls/Personal Protection

Engineering Controls:
Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Personal Protection:
Splash goggles. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

Personal Protection in Case of a Large Spill:
Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits: Not available.

Section 9: Physical and Chemical Properties

Physical state and appearance: Solid. (Solid powder.)

Odor: Odorless.

Taste: Alkaline.

Molecular Weight: 105.99 g/mole

Color: White.

pH (1% soln/water): 11.5 [Basic.]

Boiling Point: Not available.

Melting Point: 851°C (1563.8°F)

Critical Temperature: Not available.

Specific Gravity: Density: 2.532 (Water = 1)

Vapor Pressure: Not applicable.

Vapor Density: Not available.

Volatility: Not available.

Odor Threshold: Not available.

Water/Oil Dist. Coeff.: Not available.

Ionicity (in Water): Not available.

Dispersion Properties: See solubility in water.

Solubility:

Soluble in hot water, glycerol. Partially soluble in cold water. Insoluble in acetone, alcohol.

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Incompatible materials, moisture

Incompatibility with various substances:
Reactive with acids. Slightly reactive to reactive with moisture.

Corrosivity: Non-corrosive in presence of glass.

Special Remarks on Reactivity:
Hygroscopic. Combines with water with evolution of heat. Incompatible with phosphorus pentoxide, lithium, fluorine, fluoride, ammonia + silver nitrate, 2,4,6-trinitrotoluene, ammonia, acids, sodium sulfide + water, hydrogen peroxide, red hot alumium metal, sodium sulfide, zinc, calcium hydroxide. Sodium Carbonate is decomposed by acids with effervescence. Reacts violently with F2, Lithium, and 2,4,6-trinitrotoluene. Sodium begins to decompose at 400 C to evolve CO2.

Special Remarks on Corrosivity: Hot concentrated solutions of sodium carbonate are mildly corrosive to steel.

Polymerization: Will not occur.

Section 11: Toxicological Information

Routes of Entry: Inhalation. Ingestion.

Toxicity to Animals:
WARNING: THE LC50 VALUES HEREUNDER ARE ESTIMATED ON THE BASIS OF A 4-HOUR EXPOSURE. Acute oral toxicity (LD50): 4090 mg/kg [Rat]. Acute toxicity of the dust (LC50): 1200 mg/m3 2 hours [Mouse].

Chronic Effects on Humans: May cause damage to the following organs: upper respiratory tract, skin, eyes.

Other Toxic Effects on Humans: Hazardous in case of skin contact (irritant), of ingestion, of inhalation (lung irritant).

Special Remarks on Toxicity to Animals: LDL (Lowest Published Lethal Dose) [Man] - Route: Oral; Dose: 714 mg/kg

Special Remarks on Chronic Effects on Humans: May cause adverse reproductive effects based on animal test data

Special Remarks on other Toxic Effects on Humans:
Acute Potential Health Effects: Skin: Causes skin irritation with possible burns depending on the concentration, site (abraded or intact skin), and duration of exposure. Eyes: Causes eye irritation and possible burns. Concentrated solutions may cause permanent corneal injury (permanent corneal opacity). Ingestion: Sodium carbonate ingestion may cause irritation of the digestive tract resulting in nausea, vomiting, diarrhea, thirst, abdominal pain depending on concentration and amount ingested. May also affect the cardiovascular system . Inhalation: Dust may cause respiratory tract and mucous membrane irritation with coughing and shortness of breath (dyspnea), pulmonary edema. Chronic Potential Health Effects: Chronic inhalation may result in decreased pulmonary function, nasal congestion, nosebleeds, perforation of the nasal septum. Other effects of chronic exposure are skin (dermatitis and ulceration), and gastrointestinal complaints. However, the effects of chronic exposure seem to be reversible if exposure is decreased.

Section 12: Ecological Information

Ecotoxicity: Not available.

BOD5 and COD: Not available.

Products of Biodegradation:
Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The products of degradation are less toxic than the product itself.

Special Remarks on the Products of Biodegradation: Not available.

Section 13: Disposal Considerations

Waste Disposal:
Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14: Transport Information

DOT Classification: Not a DOT controlled material (United States).

Identification: Not applicable.

Special Provisions for Transport: Not applicable.

Section 15: Other Regulatory Information

Federal and State Regulations: TSCA 8(b) inventory: Sodium carbonate

Other Regulations: EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances.

Other Classifications:

WHMIS (Canada): CLASS D-2B: Material causing other toxic effects (TOXIC).

DSCL (EEC):
R36/37/38- Irritating to eyes, respiratory system and skin. S22- Do not breathe dust. S26- In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

HMIS (U.S.A.):

Health Hazard: 2

Fire Hazard: 0

Reactivity: 1

Personal Protection: E

National Fire Protection Association (U.S.A.):

Health: 2

Flammability: 0

Reactivity: 1

Specific hazard:

Protective Equipment:
Gloves. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Splash goggles.

Section 16: Other Information

References: Not available.

Other Special Considerations: Not available.

Created: 10/10/2005 08:26 PM

Last Updated: 11/01/2010 12:00 PM

Monsanto
Material Safety Data

POLYCHLORINATED BIPHENYLS (PCBs)

Emergency Phone No.
(Call Collect)
314-694-1000

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: POLYCHLORINATED BIPHENYLS (PCBs)
Aroclor® Series 1016, 1221, 1232, 1242, 1248, 1254, 1260, 1262, 1268
Therminol® FR Series

MSDS Number: M00018515 Date: 12/95

Chemical Family:	Chlorinated Hydrocarbons
Chemical Name:	Polychlorinated biphenyls
Synonyms:	PCBs, Chlorodiphenyls, Chlorinated biphenyls

Trade Names/Common Names:

PYRANOL® and INERTEEN® are trade names for commonly used dielectric fluids that may have contained varying amounts of PCBs as well as other components including chlorinated benzenes.

ASKAREL is the generic name for a broad class of fire resistant synthetic chlorinated hydrocarbons and mixtures used as dielectric fluids that commonly contained about 30 - 70% PCBs. Some ASKAREL fluids contained 99% or greater PCBs and some contained no PCBs.

PYDRAUL® is the trade name for hydraulic fluids that, prior to 1972, may have contained varying amounts of PCBs and other components including phosphate esters.

The product names/trade names are representative of several commonly used Monsanto products (or products formulated with Monsanto products). Other trademarked PCB products were marketed by Monsanto and other manufacturers. PCBs were also manufactured and sold by several European and Japanese companies. Contact the manufacturer of the trademarked product, if not in this listing, to determine if the formulation contained PCBs.

In 1972, Monsanto restricted sales of PCBs to applications involving only closed electrical systems, (transformers and capacitors). In 1977, all manufacturing and sales were voluntarily terminated. In 1979, EPA restricted the manufacture, processing, use, and distribution of PCBs to specifically exempted and authorized activities.

MONSANTO COMPANY, 800 N. LINDBERGH BLVD., ST. LOUIS, MO 63167

FOR CHEMICAL EMERGENCY, SPILL, LEAK, FIRE, EXPOSURE, OR ACCIDENT
Call CHEMTREC - Day or Night - 1-800-424-9300 Toll free in the continental U.S., Hawaii, Puerto Rico, Canada, Alaska, or Virgin Islands. For calls originating elsewhere: 202-483-7616 (collect calls accepted)

For additional nonemergency information, call: 314-694-3344.

2. COMPOSITION/INFORMATION ON INGREDIENTS

Chemically, commercial PCBs are defined as a series of technical mixtures, consisting of many isomers and compounds that vary from mobile, oily liquids to white crystalline solids and hard noncrystalline resins. Technical products vary in composition, in the degree of chlorination, and possibly according to batch.

The mixtures generally used contain an average of 3 atoms of chlorine per molecule (42% chlorine) to 5 atoms of chlorine per module (54% chlorine). They were used as components of dielectric fluids in transformers and capacitors. Prior to 1972, PCB applications included heat transfer media, hydraulic, and other industrial fluids, plasticizers, carbonless copy paper, paints, inks, and adhesives.

Component	CAS No.
chlorinated biphenyl	1336-36-3
Aroclor 1016	12674-11-2
Aroclor 1221	11104-28-2
Aroclor 1232	11141-16-5
Aroclor 1242	53469-21-9
Aroclor 1248	12672-29-6
Aroclor 1254	11097-69-1
Aroclor 1260	11096-82-5
Aroclor 1262	37324-23-5
Aroclor 1268	11100-14-4

There are also CAS Numbers for individual PCB congeners and for mixtures of Aroclor® products.

PCBs are identified as hazardous chemicals under criteria of the OSHA Hazard Communication Standard (29 CFR Part 1910.1200). PCBs have been listed in the International Agency for Research on Cancer (IARC) Monographs (1987)-Group 2A and in the National Toxicology Program (NTP) Annual Report on Carcinogens (Seventh).

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Appearance and Odor: PCB mixtures range in form and color from clear to amber liquids to white crystalline solids. They have a mild, distinctive odor and are not volatile at room temperature. Refer to Section 9 for details.

WARNING!
CAUSES EYE IRRITATION
MAY CAUSE SKIN IRRITATION

PROCESSING AT ELEVATED TEMPERATURES MAY RELEASE VAPORS OR FUMES WHICH MAY CAUSE RESPIRATORY TRACT IRRITATION

POTENTIAL HEALTH EFFECTS

Likely Routes of Exposure: Skin contact and inhalation of heated vapors

Eye Contact: Causes moderate irritation based on worker experience.

Skin Contact: Prolonged or repeated contact may result in redness, dry skin and defatting based on human experience. A potential exists for developing chloracne. PCBs can be absorbed through intact skin.

Inhalation: Due to the low volatility of PCBs, exposure to this material in ambient conditions is not expected to produce adverse health effects. However, at elevated processing temperatures, PCBs may produce a vapor that may cause respiratory tract irritation if inhaled based on human experience.

Ingestion: No more than slightly toxic based on acute animal toxicity studies. Coughing, choking and shortness of breath may occur if liquid material is accidentally drawn into the lungs during swallowing or vomiting.

Other: Numerous epidemiological studies of humans, both occupationally exposed and nonworker environmentally exposed populations, have not demonstrated any causal relationship between PCB exposure and chronic human illnesses such as cancer or neurological or cardiovascular effects. PCBs at high dosage can cause skin symptoms; however, these subside upon removal of the exposure source.

Refer to Section 11 for toxicological information.

4. FIRST AID MEASURES

IF IN EYES, immediately flush with plenty of water for at least 15 minutes. If easy to do, remove any contact lenses. Get medical attention. Remove material from skin and clothing.

IF ON SKIN, immediately flush the area with plenty of water. Wash skin gently with soap as soon as it is available. Get medical attention if irritation persists.

IF INHALED, remove person to fresh air. If breathing is difficult, get medical attention.

IF SWALLOWED, do NOT induce vomiting. Rinse mouth with water. Get medical attention. Contact a Poison Control Center. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON.

NOTE TO PHYSICIANS: Hot PCBs may cause thermal burn. If electrical equipment arcs between conductors, PCBs or other chlorinated hydrocarbon dielectric fluids may decompose to produce hydrochloric acid (HCl), a respiratory irritant. If large amounts are swallowed, gastric lavage may be considered.

5. FIRE FIGHTING MEASURES

Flash Point: 284 degrees F (140 degrees C) or higher depending on the chlorination level of the Aroclor product

Fire Point: 349 degrees F (176 degrees C) or higher depending on the chlorination level of the Aroclor product

NOTE: Refer to Section 9 for individual flash points and fire points.

Extinguishing Media: Extinguish fire using agent suitable for surrounding fire. Use dry chemical, foam, carbon dioxide or water spray. Water may be ineffective. Use water spray to keep fire-exposed containers or transformer cool.

PCBs are fire-resistant compounds. They may decompose to form CO, CO2, HCl, phenolics, aldehydes, and other toxic combustion products under severe conditions such as exposure to flame or hot surfaces.

Dielectric fluids having PCBs and chlorinated benzenes as components have been reported to produce polychlorinated dibenzo-p-dioxins (PCDDs) and furans (PCDFs) during fire situations involving electrical equipment. At temperatures in the range of 600-650 degrees C in the presence of excess oxygen, PCBs may form polychlorinated dibenzofurans (PCDFs). Laboratory studies under similar conditions have demonstrated that PCBs do not produce polychlorinated dibenzo-p-dioxins (PCDDs).

Federal regulations require all PCB transformers to be registered with fire response personnel.

If a PCB transformer is involved in a fire-related incident, the owner of the transformer may be required to report the incident. Consult and follow appropriate federal, state and local regulations.

Fire Fighting Equipment: Fire fighters and others exposed to products of combustion should wear self-contained breathing apparatus. Equipment should be thoroughly decontaminated after use.

6. ACCIDENTAL RELEASE MEASURES

Cleanup and disposal of liquid PCBs and other PCB items are strictly regulated by the federal government. The regulations are found at 40 CFR Part 761. Consult these regulations as well as applicable state and local regulations prior to any cleanup or disposal of PCBs, PCB items, or PCB contaminated items.

If PCBs leak or are spilled, the following steps should be taken immediately:

All nonessential personnel should leave the leak or spill area.

The area should be adequately ventilated to prevent the accumulation of vapors.

The spill/leak should be contained. Loss to sewer systems, navigable waterways, and streams should be prevented. Spills/leaks should be removed promptly by means of absorptive material, such as sawdust, vermiculite, dry sand, clay, dirt or other similar materials, or trapped and removed by pumping or other suitable means (traps, drip-pans, trays, etc.).

Personnel entering the spill or leak area should be furnished with appropriate personal protective equipment and clothing as needed. Refer to Section 8 for personal protection equipment and clothing.

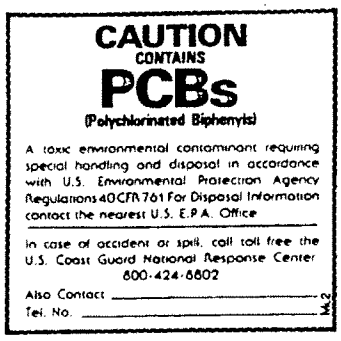
Personnel trained in emergency procedures and protected against attendant hazards should shut off sources of PCBs, clean up spills, control and repair leaks, and fight fires in PCB areas.

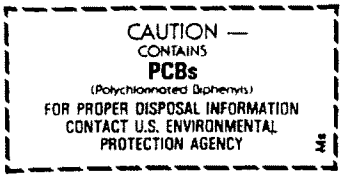
Refer to Section 13 for disposal information and Sections 14 and 15 for information regarding reportable quantity, and Section 7 for marking information.

7. HANDLING AND STORAGE

Care should be taken to prevent entry into the environment through spills, leakage, use vaporization, or disposal of liquid or containers. Avoid prolonged breathing of vapors or mists. Avoid contact with eyes or prolonged contact with skin. If skin contact occurs, remove by washing with soap and water. Following eye contact, flush with water. In case of spillage onto clothing, the clothing should be removed as soon as practical, skin washed, and clothing laundered. Comply with all federal, state, and local regulations.

Federal regulations under the Toxic Substances Control Act require PCBs, PCB items, storage areas, transformer vaults, and transport vehicles to be marked (check regulations, 40 CFR 761, for details).





Storage: The storage of PCB items or equipment (those containing 50 ppm or greater PCBs) and PCB waste is strictly regulated by 40 CFR Part 761. The storage time is limited, the storage area must meet physical requirements, and the area must be labeled.

Avoid contact with eyes.
Wash thoroughly after handling.
Avoid breathing processing fumes or vapors.
Process using adequate ventilation.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Eye Protection: Wear chemical splash goggles and have eye baths available where there is significant potential for eye contact.

Skin Protection: Wear appropriate protective clothing and chemical resistant gloves to prevent skin contact. Consult glove manufacturer to determine the appropriate type glove for a given application. Wear chemical goggles, face shield, and chemical resistant clothing such as a rubber apron when splashing is likely. Wash immediately if skin is contacted. Remove contaminated clothing promptly and launder before reuse. Clean protective equipment before reuse. Provide a safety shower at any location where skin contact can occur. Wash thoroughly after handling.

ATTENTION! Repeated or prolonged skin contact may cause chloracne in some people.

Respiratory Protection: Avoid breathing vapor, mist, or dust. Use NIOSH/MSHA approved equipment when airborne exposure limits are exceeded. Full facepiece equipment is recommended when airborne exposure limits are exceeded and, if used, replaces the need for face shield and/or chemical splash goggles. Consult respirator manufacturer to determine the type of equipment for a given application. The respirator use limitations specified by NIOSH/MSHA or the manufacturer must be observed. High airborne concentrations may require use of self-contained breathing apparatus or supplied air respirator. Respiratory protection programs must be in compliance with 29 CFR Part 1910.134.

ATTENTION! Repeated or prolonged inhalation may cause chloracne in some people.

Ventilation: Provide natural or mechanical ventilation to control exposure levels below airborne exposure limits (see below). If practical, use local mechanical exhaust ventilation at sources of vapor or mist, such as open process equipment.

Airborne Exposure Limits:

Product: Chlorodiphenyl (42% chlorine)

OSHA PEL: 1 mg/m^3 8-hour time-weighted average - Skin*
ACGIH TLV: 1 mg/m^3 8-hour time-weighted average - Skin*

Product: Chlorodiphenyl (54% chlorine)

OSHA PEL: 0.5 mg/m^3 8-hour time-weighted average - Skin*
ACGIH TLV: 0.5 mg/m^3 8-hour time-weighted average - Skin*

*For Skin notation see Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices, American Conference of Government Industrial Hygienists, 1995-1996.

9. PHYSICAL AND CHEMICAL PROPERTIES

PROPERTIES OF SELECTED AROCLORS[1]							
PROPERTY	**1016**	**1221**	**1232**	**1242**	**1248**	**1254**	**1260**
Color (APHA)	40	100	100	100	100	100	150
Physical state	mobile oil	mobile oil	mobile oil	mobile oil	mobile oil	viscous liquid	sticky resin
Stability	inert	inert	inert	inert	inert	inert	inert
Density (lb/gal 25°C)	11.40	9.85	10.55	11.50	12.04	12.82	13.50
Specific gravity x/15.5°C	1.36-1.37 x-25°	1.18-1.19 x-25°	1.27-1.28 x-25°	1.30-1.39 x-25°	1.40-1.41 x-65°	1.49-1.50 x-65°	1.55-1.56 x-90°
Distillation range (°C)	323-356	275-320	290-325	325-366	340-375	365-390	385-420
Acidity mg KOH/g, maximum	.010	.014	.014	.015	.010	.010	.014
Fire point (°C)	none to boiling point	176	238	none to boiling point	none to boiling point	none to boiling point	none to boiling point
Flash point (°C)	170	141-150	152-154	176-180	193-196	none	none
Vapor pressure (mm Hg @ 100°F)	NA	NA	0.005	0.001	0.00037	0.00006	NA
Viscosity (Saybolt Univ. Sec. @ 100°F) (centistokes)	71-81 13-16	38-41 3.6-4.6	44-51 5.5-7.7	82-92 16-19	185-240 42-52	1800-2500 390-540	— —

[1]NA—*Not Available*

NOTE: These physical data are typical values based on material tested but may vary from sample to sample. Typical values should not be construed as a guaranteed analysis of any specific lot or as specifications for the product.

10. STABILITY AND REACTIVITY

Stability: PCBs are very stable, fire-resistant compounds.
Materials to Avoid: None
Hazardous Decomposition Products: PCBs may decompose to form CO, CO_2, HCl, phenolics, aldehydes, and other toxic combustion products under severe conditions such as exposure to flame or hot surface.
Hazardous Polymerization: Does not occur.

11. TOXICOLOGICAL INFORMATION

Data from laboratory studies conducted by Monsanto and from the available scientific literature are summarized below.
Single exposure (acute) studies indicate:
Oral - Slightly Toxic (Rat LD50 - 8.65 g/kg for 42% chlorinated; 11.9 g/kg for 54% chlorinated)

The liquid products and their vapors are moderately irritating to eye tissues. Animal experiments of varying duration and at different air concentrations show that for similar exposure conditions, the 54% chlorinated material produces more liver injury than the 42% chlorinated material.

There are literature reports that PCBs can impair reproductive functions in monkeys. The National Cancer Institute (NCI) performed a study in 1977 using Aroclor 1254 with both sexes of rats. NCI stated that the PCB, Aroclor 1254, was not carcinogenic under the conditions of their bioassay. There is sufficient evidence in the scientific literature to conclude that Aroclor 1260 can cause liver cancer when fed to rodents at high doses. Similar experiments with less chlorinated PCB products have produced negative or equivocal results.

The consistent finding in animal studies is that PCBs produce liver injury following prolonged and repeated exposure by any route, if the exposure is of sufficient degree and duration. Liver injury is produced first, and by exposures that are less than those reported to cause cancer in rodents. Therefore, exposure by all routes should be kept sufficiently low to prevent liver injury.

Numerous epidemiological studies of humans, both occupationally exposed and nonworker environmentally exposed population, have not demonstrated any causal relationship between PCB exposure and chronic human illnesses such as cancer or neurological or cardiovascular effects. PCBs at high dosage can cause skin symptoms; however, these subside upon removal of the exposure source.

PCBs have been listed in the International Agency for Research on Cancer (IARC) Monographs (1987)-Group 2A and in the National Toxicology Program (NTP) Seventh Annual Report on Carcinogens.

12. ECOLOGICAL INFORMATION

Care should be taken to prevent entry of PCBs into the environment through spills, leakage, use, vaporization or disposal of liquid or solids. PCBs can accumulate in the environment and can adversely affect some animals and aquatic life. In general, PCBs have low solubility in water, are strongly bound to soils and sediments, and are slowly degraded by natural processes in the environment.

13. DISPOSAL CONSIDERATIONS

The disposal of PCB items or equipment (those containing 50 ppm or greater PCBs) and PCB wastes is strictly regulated by 40 CFR Part 761. For example, all wastes and residues containing PCBs (wiping cloths, absorbent material, used disposable protective gloves and clothing, etc.) should be collected, placed in proper containers, marked and disposed of in the manner prescribed by EPA regulations (40 CFR Part 761) and applicable state and local regulations.

14. TRANSPORT INFORMATION

The data provided in this section are for information only. Please apply the appropriate regulations to properly classify a shipment for transportation.

DOT Classification:	IF WEIGHT OF PCBs TO BE SHIPPED IS OVER ONE POUND, THE FOLLOWING CLASSIFICATION AND LABEL APPLY.	
DOT Label:	LIQUID:	Environmentally Hazardous Substance, liquid, n.o.s. (Contains PCB), 9, UN 3082, III
	SOLID:	Environmentally Hazardous Substance, solid, n.o.s. (Contains PCB), 9, UN 3077, III
DOT Label:	Class: 9	
DOT Reportable Quantity:	One Pound	
IMO Classification:	Polychlorinated Biphenyls, IMO Class 9, UN 2315, II IMO Page 9034, EMS 6.1-02	
IATA/ICAO Classification:	Polychlorinated Biphenyls, 9, UN2315, II	

15. REGULATORY INFORMATION

For regulatory purposes, under the Toxic Substances Control Act, the term "PCBs" refers to a chemical substance limited to the biphenyl molecule that has been chlorinated to varying degrees or any combination of substances which contain such a substance (40 CFR Part 761).

TSCA Inventory: not listed.

Hazard Categories Under Criteria of SARA Title III Rules (40 CFR Part 370): Immediate, Delayed.
SARA Section 313 Toxic Chemical(s): Listed-1993 (De Minimis concentration 0.1%.)

Reportable Quantity (RQ) under DOT (49 CFR) and CERCLA Regulations: 1 lb. (polychlorinated biphenyls) PCBs.

Release of more than 1 (one) pound of PCBs to the environment requires notification to the National Response Center (800-424-8802 or 202-426-2675).

Various state and local regulations may require immediate reporting of PCB spills and may also define spill cleanup levels. Consult your attorney or appropriate regulatory officials for information relating to spill reporting and spill cleanup.

16. OTHER INFORMATION

Reason for revision: Conversion to the 16 section format. Supersedes MSDS dated 10/88.

FOR ADDITIONAL NONEMERGENCY INFORMATION, CONTACT:

Gary W. Mappes
Manager, Product & Environmental Safety

Robert G. Kaley, II
Director, Environmental Affairs

Monsanto Company
800 North Lindbergh Boulevard
St. Louis, MO 63167
(314) 694-3344

Health	3
Fire	0
Reactivity	0
Personal Protection	

Material Safety Data Sheet
Mercury MSDS

Section 1: Chemical Product and Company Identification

Product Name: Mercury

Catalog Codes: SLM3505, SLM1363

CAS#: 7439-97-6

RTECS: OV4550000

TSCA: TSCA 8(b) inventory: Mercury

CI#: Not applicable.

Synonym: Quick Silver; Colloidal Mercury; Metallic Mercury; Liquid Silver; Hydragyrum

Chemical Name: Mercury

Chemical Formula: Hg

Contact Information:

Sciencelab.com, Inc.
14025 Smith Rd.
Houston, Texas 77396

US Sales: **1-800-901-7247**
International Sales: **1-281-441-4400**

Order Online: ScienceLab.com

CHEMTREC (24HR Emergency Telephone), call: 1-800-424-9300

International CHEMTREC, call: 1-703-527-3887

For non-emergency assistance, call: 1-281-441-4400

Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #	% by Weight
Mercury	7439-97-6	100

Toxicological Data on Ingredients: Mercury LD50: Not available. LC50: Not available.

Section 3: Hazards Identification

Potential Acute Health Effects:
Very hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation. Hazardous in case of skin contact (corrosive, permeator). Liquid or spray mist may produce tissue damage particularly on mucous membranes of eyes, mouth and respiratory tract. Skin contact may produce burns. Inhalation of the spray mist may produce severe irritation of respiratory tract, characterized by coughing, choking, or shortness of breath. Severe over-exposure can result in death. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering.

Potential Chronic Health Effects:
Hazardous in case of skin contact (permeator). CARCINOGENIC EFFECTS: Classified A5 (Not suspected for human.) by ACGIH. 3 (Not classifiable for human.) by IARC. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. The substance may be toxic to blood, kidneys, liver, brain, peripheral nervous system, central nervous system (CNS). Repeated or prolonged exposure to the substance can produce target organs damage. Repeated or prolonged contact with spray mist may produce chronic eye irritation and severe skin irritation.

Repeated or prolonged exposure to spray mist may produce respiratory tract irritation leading to frequent attacks of bronchial infection. Repeated exposure to a highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.

Section 4: First Aid Measures

Eye Contact:
Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. WARM water MUST be used. Get medical attention immediately.

Skin Contact:
In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Cover the irritated skin with an emollient. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.

Serious Skin Contact:
Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek immediate medical attention.

Inhalation:
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.

Serious Inhalation:
Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. WARNING: It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled material is toxic, infectious or corrosive. Seek immediate medical attention.

Ingestion:
Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.

Serious Ingestion: Not available.

Section 5: Fire and Explosion Data

Flammability of the Product: Non-flammable.

Auto-Ignition Temperature: Not applicable.

Flash Points: Not applicable.

Flammable Limits: Not applicable.

Products of Combustion: Not available.

Fire Hazards in Presence of Various Substances: Not applicable.

Explosion Hazards in Presence of Various Substances:
Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.

Fire Fighting Media and Instructions: Not applicable.

Special Remarks on Fire Hazards:
When thrown into mercury vapor, boron phosphodiiodide ignites at once. Flame forms with chlorine jet over mercury surface at 200 deg to 300 deg C. Mercury undergoes hazardous reactions in the presence of heat and sparks or ignition.

Special Remarks on Explosion Hazards:
A violent exothermic reaction or possible explosion occurs when mercury comes in contact with lithium and rubidium. CHLORINE DIOXIDE & LIQUID HG, WHEN MIXED, EXPLODE VIOLENTLY. Mercury and Ammonia can produce an

explosive compound. A mixture of the dry carbonyl and oxygen will explode on vigorous shaking with mercury. Methyl azide in the presence of mercury was shown to be potentially explosive.

Section 6: Accidental Release Measures

Small Spill: Absorb with an inert material and put the spilled material in an appropriate waste disposal.

Large Spill:
Corrosive liquid. Poisonous liquid. Stop leak if without risk. Absorb with DRY earth, sand or other non-combustible material. Do not get water inside container. Do not touch spilled material. Use water spray curtain to divert vapor drift. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed. Call for assistance on disposal. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

Section 7: Handling and Storage

Precautions:
Keep locked up.. Keep container dry. Do not ingest. Do not breathe gas/fumes/ vapor/spray. Never add water to this product. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles such as oxidizing agents, metals.

Storage: Keep container tightly closed. Keep container in a cool, well-ventilated area. Do not store above 25°C (77°F).

Section 8: Exposure Controls/Personal Protection

Engineering Controls:
Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.

Personal Protection:
Face shield. Full suit. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Gloves. Boots.

Personal Protection in Case of a Large Spill:
Splash goggles. Full suit. Vapor respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits:
TWA: 0.025 from ACGIH (TLV) [United States] SKIN TWA: 0.05 CEIL: 0.1 (mg/m3) from OSHA (PEL) [United States] Inhalation TWA: 0.025 (mg/m3) [United Kingdom (UK)] Consult local authorities for acceptable exposure limits.

Section 9: Physical and Chemical Properties

Physical state and appearance: Liquid. (Heavy liquid)

Odor: Odorless.

Taste: Not available.

Molecular Weight: 200.59 g/mole

Color: Silver-white

pH (1% soln/water): Not available.

Boiling Point: 356.73°C (674.1°F)

Melting Point: -38.87°C (-38°F)

Critical Temperature: 1462°C (2663.6°F)

Specific Gravity: 13.55 (Water = 1)

Vapor Pressure: Not available.

Vapor Density: 6.93 (Air = 1)

Volatility: Not available.

Odor Threshold: Not available.

Water/Oil Dist. Coeff.: Not available.

Ionicity (in Water): Not available.

Dispersion Properties: Not available.

Solubility: Very slightly soluble in cold water.

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Incompatible materials

Incompatibility with various substances: Reactive with oxidizing agents, metals.

Corrosivity: Non-corrosive in presence of glass.

Special Remarks on Reactivity:
Ground mixtures of sodium carbide and mercury, aluminum, lead, or iron can react vigorously. A violent exothermic reaction or possible explosion occurs when mercury comes in contact with lithium and rubidium. Incompatible with boron diiodophosphide; ethylene oxide; metal oxides, metals(aluminum, potassium, lithium, sodium, rubidium); methyl azide; methylsilane, oxygen; oxidants(bromine, peroxyformic acid, chlorine dioxide, nitric acid, tetracarbonynickel, nitromethane, silver perchlorate, chlorates, sulfuric acid, nitrates,); tetracarbonylnickel, oxygen, acetylinic compounds, ammonia, ethylene oxide, methylsiliane, calcium,

Special Remarks on Corrosivity:
The high mobility and tendency to dispersion exhibited by mercury, and the ease with which it forms alloys (amalga) with many laboratory and electrical contact metals, can cause severe corrosion problems in laboratories. Special precautions: Mercury can attack copper and copper alloy materials.

Polymerization: Will not occur.

Section 11: Toxicological Information

Routes of Entry: Absorbed through skin. Dermal contact. Eye contact. Inhalation. Ingestion.

Toxicity to Animals:
LD50: Not available. LC50: Not available.

Chronic Effects on Humans:
CARCINOGENIC EFFECTS: Classified A5 (Not suspected for human.) by ACGIH. 3 (Not classifiable for human.) by IARC. May cause damage to the following organs: blood, kidneys, liver, brain, peripheral nervous system, central nervous system (CNS).

Other Toxic Effects on Humans:
Very hazardous in case of skin contact (irritant), of ingestion, of inhalation. Hazardous in case of skin contact (corrosive, permeator).

Special Remarks on Toxicity to Animals: Not available.

Special Remarks on Chronic Effects on Humans:

May affect genetic material. May cause cancer based on animal data. Passes through the placental barrier in animal. May cause adverse reproductive effects(paternal effects- spermatogenesis; effects on fertility - fetotoxicity, post-implantation mortality), and birth defects.

Special Remarks on other Toxic Effects on Humans:

Section 12: Ecological Information

Ecotoxicity: Not available.

BOD5 and COD: Not available.

Products of Biodegradation:
Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The products of degradation are less toxic than the product itself.

Special Remarks on the Products of Biodegradation: Not available.

Section 13: Disposal Considerations

Waste Disposal:
Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14: Transport Information

DOT Classification: Class 8: Corrosive material

Identification: : Mercury UNNA: 2809 PG: III

Special Provisions for Transport: Not available.

Section 15: Other Regulatory Information

Federal and State Regulations:
California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer, birth defects or other reproductive harm, which would require a warning under the statute: Mercury California prop. 65: This product contains the following ingredients for which the State of California has found to cause birth defects which would require a warning under the statute: Mercury Connecticut hazardous material survey.: Mercury Illinois toxic substances disclosure to employee act: Mercury Illinois chemical safety act: Mercury New York acutely hazardous substances: Mercury Rhode Island RTK hazardous substances: Mercury Pennsylvania RTK: Mercury Minnesota: Mercury Massachusetts RTK: Mercury New Jersey: Mercury New Jersey spill list: Mercury Louisiana spill reporting: Mercury California Director's List of Hazardous Substances.: Mercury TSCA 8(b) inventory: Mercury SARA 313 toxic chemical notification and release reporting: Mercury CERCLA: Hazardous substances.: Mercury: 1 lbs. (0.4536 kg)

Other Regulations:
OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200). EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances.

Other Classifications:

WHMIS (Canada):
CLASS D-1A: Material causing immediate and serious toxic effects (VERY TOXIC). CLASS D-2A: Material causing other toxic effects (VERY TOXIC). CLASS E: Corrosive liquid.

DSCL (EEC):
R23- Toxic by inhalation. R33- Danger of cumulative effects. R38- Irritating to skin. R41- Risk of serious damage to eyes. R50/53- Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. S2- Keep out of the

reach of children. S7- Keep container tightly closed. S26- In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S39- Wear eye/face protection. S45- In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). S46- If swallowed, seek medical advice immediately and show this container or label. S60- This material and its container must be disposed of as hazardous waste. S61- Avoid release to the environment. Refer to special instructions/Safety data sheets.

HMIS (U.S.A.):

Health Hazard: 3

Fire Hazard: 0

Reactivity: 0

Personal Protection:

National Fire Protection Association (U.S.A.):

Health: 3

Flammability: 0

Reactivity: 0

Specific hazard:

Protective Equipment:
Gloves. Full suit. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Face shield.

Section 16: Other Information

References: Not available.

Other Special Considerations: Not available.

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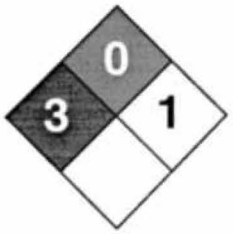

Health	3
Fire	0
Reactivity	2
Personal Protection	J

Material Safety Data Sheet
Calcium hypochlorite MSDS

Section 1: Chemical Product and Company Identification

Product Name: Calcium hypochlorite

Catalog Codes: SLC3310, SLC5098, SLC5099

CAS#: 7778-54-3

RTECS: NH3485000

TSCA: TSCA 8(b) inventory: Calcium hypochlorite

CI#: Not available.

Synonym:

Chemical Name: Not available.

Chemical Formula: Ca(OCl)2

Contact Information:

Sciencelab.com, Inc.
14025 Smith Rd.
Houston, Texas 77396

US Sales: **1-800-901-7247**
International Sales: **1-281-441-4400**

Order Online: ScienceLab.com

CHEMTREC (24HR Emergency Telephone), call: 1-800-424-9300

International CHEMTREC, call: 1-703-527-3887

For non-emergency assistance, call: 1-281-441-4400

Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #	% by Weight
Calcium hypochlorite	7778-54-3	100

Toxicological Data on Ingredients: Calcium hypochlorite: ORAL (LD50): Acute: 850 mg/kg [Rat].

Section 3: Hazards Identification

Potential Acute Health Effects:
Very hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation. Slightly hazardous in case of skin contact (permeator). Corrosive to eyes and skin. The amount of tissue damage depends on length of contact. Eye contact can result in corneal damage or blindness. Skin contact can produce inflammation and blistering. Inhalation of dust will produce irritation to gastro-intestinal or respiratory tract, characterized by burning, sneezing and coughing. Severe over-exposure can produce lung damage, choking, unconsciousness or death. Prolonged exposure may result in skin burns and ulcerations. Over-exposure by inhalation may cause respiratory irritation. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering.

Potential Chronic Health Effects:
CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. The substance is toxic to lungs, mucous membranes. Repeated or prolonged exposure to the substance can produce target organs damage. Repeated exposure of the eyes to a low level of dust can produce eye irritation. Repeated skin exposure can produce local skin destruction, or dermatitis. Repeated inhalation of dust can produce varying degree of respiratory irritation or lung damage.

Section 4: First Aid Measures

Eye Contact:
Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Cold water may be used. Do not use an eye ointment. Seek medical attention.

Skin Contact:
If the chemical got onto the clothed portion of the body, remove the contaminated clothes as quickly as possible, protecting your own hands and body. Place the victim under a deluge shower. If the chemical got on the victim's exposed skin, such as the hands : Gently and thoroughly wash the contaminated skin with running water and non-abrasive soap. Be particularly careful to clean folds, crevices, creases and groin. Cold water may be used. If irritation persists, seek medical attention. Wash contaminated clothing before reusing.

Serious Skin Contact:
Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek immediate medical attention.

Inhalation: Allow the victim to rest in a well ventilated area. Seek immediate medical attention.

Serious Inhalation:
Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. WARNING: It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled material is toxic, infectious or corrosive. Seek immediate medical attention.

Ingestion:
Do not induce vomiting. Examine the lips and mouth to ascertain whether the tissues are damaged, a possible indication that the toxic material was ingested; the absence of such signs, however, is not conclusive. Loosen tight clothing such as a collar, tie, belt or waistband. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek immediate medical attention.

Serious Ingestion: Not available.

Section 5: Fire and Explosion Data

Flammability of the Product: Non-flammable.

Auto-Ignition Temperature: Not applicable.

Flash Points: Not applicable.

Flammable Limits: Not applicable.

Products of Combustion: Not available.

Fire Hazards in Presence of Various Substances: Not applicable.

Explosion Hazards in Presence of Various Substances:
Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.

Fire Fighting Media and Instructions: Not applicable.

Special Remarks on Fire Hazards: Not available.

Special Remarks on Explosion Hazards: Not available.

Section 6: Accidental Release Measures

Small Spill: Use appropriate tools to put the spilled solid in a convenient waste disposal container.

Large Spill:
Oxidizing material. Corrosive solid. Stop leak if without risk. Do not get water inside container. Avoid contact with a combustible material (wood, paper, oil, clothing...). Keep substance damp using water spray. Do not touch spilled material.

Clean up spills in a manner that does not disperse dust into the air. Prevent entry into sewers, basements or confined areas; dike if needed. Call for assistance on disposal.

Section 7: Handling and Storage

Precautions:
Keep container dry. Keep away from heat. Keep away from sources of ignition. Keep away from combustible material Do not ingest. Do not breathe dust. Never add water to this product In case of insufficient ventilation, wear suitable respiratory equipment If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes Keep away from incompatibles such as reducing agents, combustible materials, organic materials, acids, moisture.

Storage:
May corrode metallic surfaces. Store in a metallic or coated fiberboard drum using a strong polyethylene inner package. Corrosive materials should be stored in a separate safety storage cabinet or room.

Section 8: Exposure Controls/Personal Protection

Engineering Controls:
Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Personal Protection:
Splash goggles. Lab coat. Vapor and dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

Personal Protection in Case of a Large Spill:
Splash goggles. Full suit. Vapor and dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits: Not available.

Section 9: Physical and Chemical Properties

Physical state and appearance: Solid.

Odor: Not available.

Taste: Not available.

Molecular Weight: 142.99 g/mole

Color: Not available.

pH (1% soln/water): Not available.

Boiling Point: Decomposes.

Melting Point: 100°C (212°F)

Critical Temperature: Not available.

Specific Gravity: Not available.

Vapor Pressure: Not applicable.

Vapor Density: Not available.

Volatility: Not available.

Odor Threshold: Not available.

Water/Oil Dist. Coeff.: Not available.

Ionicity (in Water): Not available.

Dispersion Properties: See solubility in water.

Solubility: Soluble in cold water, hot water.

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Not available.

Incompatibility with various substances: Reactive with reducing agents, combustible materials, organic materials, acids, moisture.

Corrosivity:
Extremely corrosive in presence of aluminum, of zinc. Corrosive in presence of steel, of copper. Slightly corrosive to corrosive in presence of glass, of stainless steel(304), of stainless steel(316).

Special Remarks on Reactivity: Not available.

Special Remarks on Corrosivity: Not available.

Polymerization: No.

Section 11: Toxicological Information

Routes of Entry: Eye contact. Inhalation. Ingestion.

Toxicity to Animals: Acute oral toxicity (LD50): 850 mg/kg [Rat].

Chronic Effects on Humans: The substance is toxic to lungs, mucous membranes.

Other Toxic Effects on Humans:
Very hazardous in case of skin contact (irritant), of ingestion, of inhalation. Slightly hazardous in case of skin contact (permeator).

Special Remarks on Toxicity to Animals: Not available.

Special Remarks on Chronic Effects on Humans: Not available.

Special Remarks on other Toxic Effects on Humans: Not available.

Section 12: Ecological Information

Ecotoxicity: Not available.

BOD5 and COD: Not available.

Products of Biodegradation:
Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The products of degradation are more toxic.

Special Remarks on the Products of Biodegradation: Not available.

Section 13: Disposal Considerations

Waste Disposal:

Section 14: Transport Information

DOT Classification: CLASS 5.1: Oxidizing material.

Identification: : Calcium hypochlorite, dry : UN1748 PG: II

Special Provisions for Transport: Not available.

Section 15: Other Regulatory Information

Federal and State Regulations:
Pennsylvania RTK: Calcium hypochlorite Massachusetts RTK: Calcium hypochlorite TSCA 8(b) inventory: Calcium hypochlorite CERCLA: Hazardous substances.: Calcium hypochlorite

Other Regulations: OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200).

Other Classifications:

WHMIS (Canada):
CLASS C: Oxidizing material. CLASS E: Corrosive solid.

DSCL (EEC):
R22- Harmful if swallowed. R38- Irritating to skin. R41- Risk of serious damage to eyes.

HMIS (U.S.A.):

Health Hazard: 3

Fire Hazard: 0

Reactivity: 2

Personal Protection: j

National Fire Protection Association (U.S.A.):

Health: 3

Flammability: 0

Reactivity: 1

Specific hazard:

Protective Equipment:
Gloves. Lab coat. Vapor and dust respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Splash goggles.

Section 16: Other Information

References: Not available.

Other Special Considerations: Not available.

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Last Updated: 11/01/2010 12:00 PM

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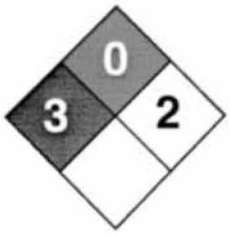

Material Safety Data Sheet
Sulfuric acid MSDS

Section 1: Chemical Product and Company Identification

Product Name: Sulfuric acid

Catalog Codes: SLS2539, SLS1741, SLS3166, SLS2371, SLS3793

CAS#: 7664-93-9

RTECS: WS5600000

TSCA: TSCA 8(b) inventory: Sulfuric acid

CI#: Not applicable.

Synonym: Oil of Vitriol; Sulfuric Acid

Chemical Name: Hydrogen sulfate

Chemical Formula: H2-SO4

Contact Information:

Sciencelab.com, Inc.
14025 Smith Rd.
Houston, Texas 77396

US Sales: **1-800-901-7247**
International Sales: **1-281-441-4400**

Order Online: ScienceLab.com

CHEMTREC (24HR Emergency Telephone), call: 1-800-424-9300

International CHEMTREC, call: 1-703-527-3887

For non-emergency assistance, call: 1-281-441-4400

Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #	% by Weight
Sulfuric acid	7664-93-9	95 - 98

Toxicological Data on Ingredients: Sulfuric acid: ORAL (LD50): Acute: 2140 mg/kg [Rat.]. VAPOR (LC50): Acute: 510 mg/m 2 hours [Rat]. 320 mg/m 2 hours [Mouse].

Section 3: Hazards Identification

Potential Acute Health Effects:
Very hazardous in case of skin contact (corrosive, irritant, permeator), of eye contact (irritant, corrosive), of ingestion, of inhalation. Liquid or spray mist may produce tissue damage particularly on mucous membranes of eyes, mouth and respiratory tract. Skin contact may produce burns. Inhalation of the spray mist may produce severe irritation of respiratory tract, characterized by coughing, choking, or shortness of breath. Severe over-exposure can result in death. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering.

Potential Chronic Health Effects:
CARCINOGENIC EFFECTS: Classified 1 (Proven for human.) by IARC, + (Proven.) by OSHA. Classified A2 (Suspected for human.) by ACGIH. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. The substance may be toxic to kidneys, lungs, heart, cardiovascular system, upper respiratory tract, eyes, teeth. Repeated or prolonged exposure to the substance can produce target organs damage. Repeated or prolonged

contact with spray mist may produce chronic eye irritation and severe skin irritation. Repeated or prolonged exposure to spray mist may produce respiratory tract irritation leading to frequent attacks of bronchial infection. Repeated exposure to a highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.

Section 4: First Aid Measures

Eye Contact:
Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention immediately.

Skin Contact:
In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Cover the irritated skin with an emollient. Cold water may be used.Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.

Serious Skin Contact:
Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek immediate medical attention.

Inhalation:
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.

Serious Inhalation:
Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. WARNING: It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled material is toxic, infectious or corrosive. Seek immediate medical attention.

Ingestion:
Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms appear.

Serious Ingestion: Not available.

Section 5: Fire and Explosion Data

Flammability of the Product: Non-flammable.

Auto-Ignition Temperature: Not applicable.

Flash Points: Not applicable.

Flammable Limits: Not applicable.

Products of Combustion:
Products of combustion are not available since material is non-flammable. However, products of decompostion include fumes of oxides of sulfur. Will react with water or steam to produce toxic and corrosive fumes. Reacts with carbonates to generate carbon dioxide gas. Reacts with cyanides and sulfides to form poisonous hydrogen cyanide and hydrogen sulfide respectively.

Fire Hazards in Presence of Various Substances: Combustible materials

Explosion Hazards in Presence of Various Substances:
Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available. Slightly explosive in presence of oxidizing materials.

Fire Fighting Media and Instructions: Not applicable.

Special Remarks on Fire Hazards:
Metal acetylides (Monocesium and Monorubidium), and carbides ignite with concentrated sulfuric acid. White Phosphorous + boiling Sulfuric acid or its vapor ignites on contact. May ignite other combustible materials. May cause fire when sulfuric acid is mixed with Cyclopentadiene, cyclopentanone oxime, nitroaryl amines, hexalithium disilicide, phorphorous (III) oxide, and oxidizing agents such as chlorates, halogens, permanganates.

Special Remarks on Explosion Hazards:
Mixturesofsulfuricacidandanyofthefollowingcanexplode:p-nitrotoluene,pentasilver trihydroxydiaminophosphate, perchlorates, alcohols with strong hydrogen peroxide, ammonium tetraperoxychromate, mercuric nitrite, potassium chlorate, potassium permanganate with potassium chloride, carbides, nitro compounds, nitrates, carbides, phosphorous, iodides, picratres, fulminats, dienes, alcohols (when heated) Nitramide decomposes explosively on contact with concentrated sulfuric acid. 1,3,5-Trinitrosohexahydro-1,3,5-triazine + sulfuric acid causes explosive decompositon.

Section 6: Accidental Release Measures

Small Spill:
Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container. If necessary: Neutralize the residue with a dilute solution of sodium carbonate.

Large Spill:
Corrosive liquid. Poisonous liquid. Stop leak if without risk. Absorb with DRY earth, sand or other non-combustible material. Do not get water inside container. Do not touch spilled material. Use water spray curtain to divert vapor drift. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed. Call for assistance on disposal. Neutralize the residue with a dilute solution of sodium carbonate. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

Section 7: Handling and Storage

Precautions:
Keep locked up.. Keep container dry. Do not ingest. Do not breathe gas/fumes/ vapor/spray. Never add water to this product. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles such as oxidizing agents, reducing agents, combustible materials, organic materials, metals, acids, alkalis, moisture. May corrode metallic surfaces. Store in a metallic or coated fiberboard drum using a strong polyethylene inner package.

Storage:
Hygroscopic. Reacts. violently with water. Keep container tightly closed. Keep container in a cool, well-ventilated area. Do not store above 23°C (73.4°F).

Section 8: Exposure Controls/Personal Protection

Engineering Controls:
Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.

Personal Protection:
Face shield. Full suit. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Gloves. Boots.

Personal Protection in Case of a Large Spill:
Splash goggles. Full suit. Vapor respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits:
TWA: 1 STEL: 3 (mg/m3) [Australia] Inhalation TWA: 1 (mg/m3) from OSHA (PEL) [United States] Inhalation TWA: 1 STEL: 3 (mg/m3) from ACGIH (TLV) [United States] [1999] Inhalation TWA: 1 (mg/m3) from NIOSH [United States] Inhalation TWA: 1 (mg/m3) [United Kingdom (UK)]Consult local authorities for acceptable exposure limits.

Section 9: Physical and Chemical Properties

Physical state and appearance: Liquid. (Thick oily liquid.)

Odor: Odorless, but has a choking odor when hot.

Taste: Marked acid taste. (Strong.)

Molecular Weight: 98.08 g/mole

Color: Colorless.

pH (1% soln/water): Acidic.

Boiling Point:
270°C (518°F) - 340 deg. C Decomposes at 340 deg. C

Melting Point: -35°C (-31°F) to 10.36 deg. C (93% to 100% purity)

Critical Temperature: Not available.

Specific Gravity: 1.84 (Water = 1)

Vapor Pressure: Not available.

Vapor Density: 3.4 (Air = 1)

Volatility: Not available.

Odor Threshold: Not available.

Water/Oil Dist. Coeff.: Not available.

Ionicity (in Water): Not available.

Dispersion Properties: See solubility in water.

Solubility:
Easily soluble in cold water. Sulfuric is soluble in water with liberation of much heat. Soluble in ethyl alcohol.

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability:
Conditions to Avoid: Incompatible materials, excess heat, combustible material materials, organic materials, exposure to moist air or water, oxidizers, amines, bases. Always add the acid to water, never the reverse.

Incompatibility with various substances:
Reactive with oxidizing agents, reducing agents, combustible materials, organic materials, metals, acids, alkalis, moisture.

Corrosivity:
Extremely corrosive in presence of aluminum, of copper, of stainless steel(316). Highly corrosive in presence of stainless steel(304). Non-corrosive in presence of glass.

Special Remarks on Reactivity:
Hygroscopic. Strong oxidizer. Reacts violently with water and alcohol especially when water is added to the product. Incompatible (can react explosively or dangerously) with the following: ACETIC ACID, ACRYLIC ACID, AMMONIUM HYDROXIDE, CRESOL, CUMENE, DICHLOROETHYL ETHER, ETHYLENE CYANOHYDRIN, ETHYLENEIMINE, NITRIC ACID, 2-NITROPROPANE, PROPYLENE OXIDE, SULFOLANE, VINYLIDENE CHLORIDE, DIETHYLENE GLYCOL MONOMETHYL ETHER, ETHYL ACETATE, ETHYLENE CYANOHYDRIN, ETHYLENE GLYCOL MONOETHYL ETHER ACETATE, GLYOXAL, METHYL ETHYL KETONE, dehydrating agents, organic materials, moisture (water), Acetic anhydride, Acetone, cyanohydrin, Acetone+nitric acid, Acetone + potassium dichromate, Acetonitrile, Acrolein, Acrylonitrile, Acrylonitrile +water, Alcohols + hydrogen peroxide, ally compounds such as Allyl alcohol, and Allyl Chloride, 2-Aminoethanol, Ammonium hydroxide, Ammonium triperchromate, Aniline, Bromate + metals, Bromine pentafluoride, n-Butyraldehyde, Carbides, Cesium acetylene carbide, Chlorates, Cyclopentanone oxime, chlorinates, Chlorates + metals, Chlorine trifluoride, Chlorosulfonic acid, 2-cyano-4-nitrobenzenediazonium hydrogen sulfate, Cuprous nitride, p-chloronitrobenzene, 1,5-Dinitronaphthlene +

sulfur, Diisobutylene, p-dimethylaminobenzaldehyde, 1,3-Diazidobenzene, Dimethylbenzylcarbinol + hydrogen peroxide, Epichlorohydrin, Ethyl alcohol + hydrogen peroxide, Ethylene diamine, Ethylene glycol and other glycols, , Ethylenimine, Fulminates, hydrogen peroxide, Hydrochloric acid, Hydrofluoric acid, Iodine heptafluoride, Indane + nitric acid, Iron, Isoprene, Lithium silicide, Mercuric nitride, Mesityl oxide, Mercury nitride, Metals (powdered), Nitromethane, Nitric acid + glycerides, p-Nitrotoluene, Pentasilver trihydroxydiaminophosphate, Perchlorates, Perchloric acid, Permanganates + benzene, 1-Phenyl-2-methylpropyl alcohol + hydrogen peroxide, Phosphorus, Phosphorus isocyanate, Picrates, Potassium tert-butoxide, Potassium chlorate, Potassium Permanganate and other permanganates, halogens, amines, Potassium Permanganate + Potassium chloride, Potassium Permanganate + water, Propiolactone (beta)-, Pyridine, Rubidium aceteylene carbide, Silver permanganate, Sodium, Sodium carbonate, sodium hydroxide, Steel, styrene monomer, toluene + nitric acid, Vinyl acetate, Thalium (I) azidodithiocarbonate, Zinc chlorate, Zinc Iodide, azides, carbonates, cyanides, sulfides, sulfites, alkali hydrides, carboxylic acid anhydrides, nitriles, olefinic organics, aqueous acids, cyclopentadiene, cyano-alcohols, metal acetylides, Hydrogen gas is generated by the action of the acid on most metals (i.e. lead, copper, tin, zinc, aluminum, etc.). Concentrated sulfuric acid oxidizes, dehydrates, or sulfonates most organic compounds.

Special Remarks on Corrosivity:
Non-corrosive to lead and mild steel, but dillute acid attacks most metals. Attacks many metals releasing hydrogen. Minor corrosive effect on bronze. No corrosion data on brass or zinc.

Polymerization: Will not occur.

Section 11: Toxicological Information

Routes of Entry: Absorbed through skin. Dermal contact. Eye contact. Inhalation. Ingestion.

Toxicity to Animals:
WARNING: THE LC50 VALUES HEREUNDER ARE ESTIMATED ON THE BASIS OF A 4-HOUR EXPOSURE. Acute oral toxicity (LD50): 2140 mg/kg [Rat.]. Acute toxicity of the vapor (LC50): 320 mg/m3 2 hours [Mouse].

Chronic Effects on Humans:
CARCINOGENIC EFFECTS: Classified 1 (Proven for human.) by IARC, + (Proven.) by OSHA. Classified A2 (Suspected for human.) by ACGIH. May cause damage to the following organs: kidneys, lungs, heart, cardiovascular system, upper respiratory tract, eyes, teeth.

Other Toxic Effects on Humans:
Extremely hazardous in case of inhalation (lung corrosive). Very hazardous in case of skin contact (corrosive, irritant, permeator), of eye contact (corrosive), of ingestion, .

Special Remarks on Toxicity to Animals: Not available.

Special Remarks on Chronic Effects on Humans:
Mutagenicity: Cytogenetic Analysis: Hamster, ovary = 4mmol/L Reproductive effects: May cause adverse reproductive effects based on animal data. Developmental abnormalities (musculoskeletal) in rabbits at a dose of 20 mg/m3 for 7 hrs.(RTECS) Teratogenecity: neither embryotoxic, fetoxic, nor teratogenetic in mice or rabbits at inhaled doses producing some maternal toxicity

Special Remarks on other Toxic Effects on Humans:
Acute Potential Health Effects: Skin: Causes severe skin irritation and burns. Continued contact can cause tissue necrosis. Eye: Causes severe eye irritation and burns. May cause irreversible eye injury. Ingestion: Harmful if swallowed. May cause permanent damage to the digestive tract. Causes gastrointestial tract burns. May cause perforation of the stomach, GI bleeding, edema of the glottis, necrosis and scarring, and sudden circulatory collapse(similar to acute inhalation). It may also cause systemic toxicity with acidosis. Inhalation: May cause severe irritation of the respiratory tract and mucous membranes with sore throat, coughing, shortness of breath, and delayed lung edema. Causes chemical burns to the repiratory tract. Inhalation may be fatal as a result of spasm, inflammation, edema of the larynx and bronchi, chemical pneumonitis, and pulmonary edema. Cause corrosive action on mucous membranes. May affect cardiovascular system (hypotension, depressed cardiac output, bradycardia). Circulatory collapse with clammy skin, weak and rapid pulse, shallow respiration, and scanty urine may follow. Circulatory shock is often the immediate cause of death. May also affect teeth(changes in teeth and supporting structures - erosion, discoloration). Chronic Potential Health Effects: Inhalation: Prolonged or repeated inhalation may affect behavior (muscle contraction or spasticity), urinary system (kidney damage), and cardiovascular system, heart (ischemic heart leisons), and respiratory system/lungs(pulmonary edema, lung damage), teeth (dental discoloration, erosion). Skin: Prolonged or repeated skin contact may cause dermatitis, an allergic skin reaction.

Section 12: Ecological Information

Ecotoxicity: Ecotoxicity in water (LC50): 49 mg/l 48 hours [bluegill/sunfish].

BOD5 and COD: Not available.

Products of Biodegradation:
Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The products of degradation are less toxic than the product itself.

Special Remarks on the Products of Biodegradation: Not available.

Section 13: Disposal Considerations

Waste Disposal:
Sulfuric acid may be placed in sealed container or absorbed in vermiculite, dry sand, earth, or a similar material. It may also be diluted and neutralized. Be sure to consult with local or regional authorities (waste regulators) prior to any disposal. Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14: Transport Information

DOT Classification: Class 8: Corrosive material

Identification: : Sulfuric acid UNNA: 1830 PG: II

Special Provisions for Transport: Not available.

Section 15: Other Regulatory Information

Federal and State Regulations:
Illinois toxic substances disclosure to employee act: Sulfuric acid New York release reporting list: Sulfuric acid Rhode Island RTK hazardous substances: Sulfuric acid Pennsylvania RTK: Sulfuric acid Minnesota: Sulfuric acid Massachusetts RTK: Sulfuric acid New Jersey: Sulfuric acid California Director's List of Hazardous Substances (8 CCR 339): Sulfuric acid Tennessee RTK: Sulfuric acid TSCA 8(b) inventory: Sulfuric acid SARA 302/304/311/312 extremely hazardous substances: Sulfuric acid SARA 313 toxic chemical notification and release reporting: Sulfuric acid CERCLA: Hazardous substances.: Sulfuric acid: 1000 lbs. (453.6 kg)

Other Regulations:
OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200). EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances.

Other Classifications:

WHMIS (Canada):
CLASS D-1A: Material causing immediate and serious toxic effects (VERY TOXIC). CLASS E: Corrosive liquid.

DSCL (EEC):
R35- Causes severe burns. S2- Keep out of the reach of children. S26- In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S30- Never add water to this product. S45- In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

HMIS (U.S.A.):

Health Hazard: 3

Fire Hazard: 0

Reactivity: 2

Personal Protection:

National Fire Protection Association (U.S.A.):

Health: 3

Flammability: 0

Reactivity: 2

Specific hazard:

Protective Equipment:
Gloves. Full suit. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Face shield.

Section 16: Other Information

References:
-Material safety data sheet emitted by: la Commission de la Santé et de la Sécurité du Travail du Québec. -The Sigma-Aldrich Library of Chemical Safety Data, Edition II. -Hawley, G.G.. The Condensed Chemical Dictionary, 11e ed., New York N.Y., Van Nostrand Reinold, 1987.

Other Special Considerations: Not available.

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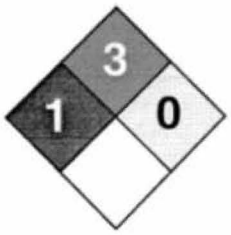

Health	2
Fire	3
Reactivity	0
Personal Protection	H

Material Safety Data Sheet
Acetone MSDS

Section 1: Chemical Product and Company Identification

Product Name: Acetone

Catalog Codes: SLA3502, SLA1645, SLA3151, SLA3808

CAS#: 67-64-1

RTECS: AL3150000

TSCA: TSCA 8(b) inventory: Acetone

CI#: Not applicable.

Synonym: 2-propanone; Dimethyl Ketone; Dimethylformaldehyde; Pyroacetic Acid

Chemical Name: Acetone

Chemical Formula: C3-H6-O

Contact Information:

Sciencelab.com, Inc.
14025 Smith Rd.
Houston, Texas 77396

US Sales: **1-800-901-7247**
International Sales: **1-281-441-4400**

Order Online: ScienceLab.com

CHEMTREC (24HR Emergency Telephone), call: 1-800-424-9300

International CHEMTREC, call: 1-703-527-3887

For non-emergency assistance, call: 1-281-441-4400

Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #	% by Weight
Acetone	67-64-1	100

Toxicological Data on Ingredients: Acetone: ORAL (LD50): Acute: 5800 mg/kg [Rat]. 3000 mg/kg [Mouse]. 5340 mg/kg [Rabbit]. VAPOR (LC50): Acute: 50100 mg/m 8 hours [Rat]. 44000 mg/m 4 hours [Mouse].

Section 3: Hazards Identification

Potential Acute Health Effects:
Hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation. Slightly hazardous in case of skin contact (permeator).

Potential Chronic Health Effects:
CARCINOGENIC EFFECTS: A4 (Not classifiable for human or animal.) by ACGIH. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Classified Reproductive system/toxin/female, Reproductive system/toxin/male [SUSPECTED]. The substance is toxic to central nervous system (CNS). The substance may be toxic to kidneys, the reproductive system, liver, skin. Repeated or prolonged exposure to the substance can produce target organs damage.

Section 4: First Aid Measures

Eye Contact:
Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Cold water may be used. Get medical attention.

Skin Contact:
In case of contact, immediately flush skin with plenty of water. Cover the irritated skin with an emollient. Remove contaminated clothing and shoes. Cold water may be used.Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.

Serious Skin Contact:
Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek medical attention.

Inhalation:
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention if symptoms appear.

Serious Inhalation:
Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek medical attention.

Ingestion:
Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms appear.

Serious Ingestion: Not available.

Section 5: Fire and Explosion Data

Flammability of the Product: Flammable.

Auto-Ignition Temperature: 465°C (869°F)

Flash Points: CLOSED CUP: -20°C (-4°F). OPEN CUP: -9°C (15.8°F) (Cleveland).

Flammable Limits: LOWER: 2.6% UPPER: 12.8%

Products of Combustion: These products are carbon oxides (CO, CO2).

Fire Hazards in Presence of Various Substances: Highly flammable in presence of open flames and sparks, of heat.

Explosion Hazards in Presence of Various Substances:
Risks of explosion of the product in presence of mechanical impact: Not available. Slightly explosive in presence of open flames and sparks, of oxidizing materials, of acids.

Fire Fighting Media and Instructions:
Flammable liquid, soluble or dispersed in water. SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use alcohol foam, water spray or fog.

Special Remarks on Fire Hazards: Vapor may travel considerable distance to source of ignition and flash back.

Special Remarks on Explosion Hazards:
Forms explosive mixtures with hydrogen peroxide, acetic acid, nitric acid, nitric acid + sulfuric acid, chromic anydride, chromyl chloride, nitrosyl chloride, hexachloromelamine, nitrosyl perchlorate, nitryl perchlorate, permonosulfuric acid, thiodiglycol + hydrogen peroxide, potassium ter-butoxide, sulfur dichloride, 1-methyl-1,3-butadiene, bromoform, carbon, air, chloroform, thitriazylperchlorate.

Section 6: Accidental Release Measures

Small Spill:
Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container.

Large Spill:
Flammable liquid. Keep away from heat. Keep away from sources of ignition. Stop leak if without risk. Absorb with DRY earth, sand or other non-combustible material. Do not touch spilled material. Prevent entry into sewers, basements or confined areas; dike if needed. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

Section 7: Handling and Storage

Precautions:
Keep locked up.. Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not ingest. Do not breathe gas/fumes/ vapor/spray. Wear suitable protective clothing. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles such as oxidizing agents, reducing agents, acids, alkalis.

Storage:
Store in a segregated and approved area (flammables area) . Keep container in a cool, well-ventilated area. Keep container tightly closed and sealed until ready for use. Keep away from direct sunlight and heat and avoid all possible sources of ignition (spark or flame).

Section 8: Exposure Controls/Personal Protection

Engineering Controls:
Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.

Personal Protection:
Splash goggles. Lab coat. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

Personal Protection in Case of a Large Spill:
Splash goggles. Full suit. Vapor respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits:
TWA: 500 STEL: 750 (ppm) from ACGIH (TLV) [United States] TWA: 750 STEL: 1000 (ppm) from OSHA (PEL) [United States] TWA: 500 STEL: 1000 [Austalia] TWA: 1185 STEL: 2375 (mg/m3) [Australia] TWA: 750 STEL: 1500 (ppm) [United Kingdom (UK)] TWA: 1810 STEL: 3620 (mg/m3) [United Kingdom (UK)] TWA: 1800 STEL: 2400 from OSHA (PEL) [United States]Consult local authorities for acceptable exposure limits.

Section 9: Physical and Chemical Properties

Physical state and appearance: Liquid.

Odor: Fruity. Mint-like. Fragrant. Ethereal

Taste: Pungent, Sweetish

Molecular Weight: 58.08 g/mole

Color: Colorless. Clear

pH (1% soln/water): Not available.

Boiling Point: 56.2°C (133.2°F)

Melting Point: -95.35 (-139.6°F)

Critical Temperature: 235°C (455°F)

Specific Gravity: 0.79 (Water = 1)

Vapor Pressure: 24 kPa (@ 20°C)

Vapor Density: 2 (Air = 1)

Volatility: Not available.

Odor Threshold: 62 ppm

Water/Oil Dist. Coeff.: The product is more soluble in water; log(oil/water) = -0.2

Ionicity (in Water): Not available.

Dispersion Properties: See solubility in water.

Solubility: Easily soluble in cold water, hot water.

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Excess heat, ignition sources, exposure to moisture, air, or water, incompatible materials.

Incompatibility with various substances: Reactive with oxidizing agents, reducing agents, acids, alkalis.

Corrosivity: Non-corrosive in presence of glass.

Special Remarks on Reactivity: Not available.

Special Remarks on Corrosivity: Not available.

Polymerization: Will not occur.

Section 11: Toxicological Information

Routes of Entry: Absorbed through skin. Dermal contact. Eye contact. Inhalation.

Toxicity to Animals:
WARNING: THE LC50 VALUES HEREUNDER ARE ESTIMATED ON THE BASIS OF A 4-HOUR EXPOSURE. Acute oral toxicity (LD50): 3000 mg/kg [Mouse]. Acute toxicity of the vapor (LC50): 44000 mg/m3 4 hours [Mouse].

Chronic Effects on Humans:
CARCINOGENIC EFFECTS: A4 (Not classifiable for human or animal.) by ACGIH. DEVELOPMENTAL TOXICITY: Classified Reproductive system/toxin/female, Reproductive system/toxin/male [SUSPECTED]. Causes damage to the following organs: central nervous system (CNS). May cause damage to the following organs: kidneys, the reproductive system, liver, skin.

Other Toxic Effects on Humans:
Hazardous in case of skin contact (irritant), of ingestion, of inhalation. Slightly hazardous in case of skin contact (permeator).

Special Remarks on Toxicity to Animals: Not available.

Special Remarks on Chronic Effects on Humans:
May affect genetic material (mutagenicity) based on studies with yeast (S. cerevisiae), bacteria, and hamster fibroblast cells. May cause reproductive effects (fertility) based upon animal studies. May contain trace amounts of benzene and formaldehyde which may cancer and birth defects. Human: passes the placental barrier.

Special Remarks on other Toxic Effects on Humans:
Acute Potential Health Effects: Skin: May cause skin irritation. May be harmful if absorbed through the skin. Eyes: Causes eye irritation, characterized by a burning sensation, redness, tearing, inflammation, and possible corneal injury. Inhalation: Inhalation at high concentrations affects the sense organs, brain and causes respiratory tract irritation. It also may affect the Central Nervous System (behavior) characterized by dizzness, drowsiness, confusion, headache, muscle weakeness, and possibly motor incoordination, speech abnormalities, narcotic effects and coma. Inhalation may also affect the gastrointestinal tract (nausea, vomiting). Ingestion: May cause irritation of the digestive (gastrointestinal) tract (nausea, vomiting). It may also

affect the Central Nevous System (behavior), characterized by depression, fatigue, excitement, stupor, coma, headache, altered sleep time, ataxia, tremors as well at the blood, liver, and urinary system (kidney, bladder, ureter) and endocrine system. May also have musculoskeletal effects. Chronic Potential Health Effects: Skin: May cause dermatitis. Eyes: Eye irritation.

Section 12: Ecological Information

Ecotoxicity:
Ecotoxicity in water (LC50): 5540 mg/l 96 hours [Trout]. 8300 mg/l 96 hours [Bluegill]. 7500 mg/l 96 hours [Fatthead Minnow]. 0.1 ppm any hours [Water flea].

BOD5 and COD: Not available.

Products of Biodegradation:
Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The product itself and its products of degradation are not toxic.

Special Remarks on the Products of Biodegradation: Not available.

Section 13: Disposal Considerations

Waste Disposal:
Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14: Transport Information

DOT Classification: CLASS 3: Flammable liquid.

Identification: : Acetone UNNA: 1090 PG: II

Special Provisions for Transport: Not available.

Section 15: Other Regulatory Information

Federal and State Regulations:
California prop. 65: This product contains the following ingredients for which the State of California has found to cause reproductive harm (male) which would require a warning under the statute: Benzene California prop. 65: This product contains the following ingredients for which the State of California has found to cause birth defects which would require a warning under the statute: Benzene California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer which would require a warning under the statute: Benzene, Formaldehyde Connecticut hazardous material survey.: Acetone Illinois toxic substances disclosure to employee act: Acetone Illinois chemical safety act: Acetone New York release reporting list: Acetone Rhode Island RTK hazardous substances: Acetone Pennsylvania RTK: Acetone Florida: Acetone Minnesota: Acetone Massachusetts RTK: Acetone Massachusetts spill list: Acetone New Jersey: Acetone New Jersey spill list: Acetone Louisiana spill reporting: Acetone California List of Hazardous Substances (8 CCR 339): Acetone TSCA 8(b) inventory: Acetone TSCA 4(a) final test rules: Acetone TSCA 8(a) IUR: Acetone

Other Regulations:
OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200). EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances.

Other Classifications:

WHMIS (Canada):
CLASS B-2: Flammable liquid with a flash point lower than 37.8°C (100°F). CLASS D-2B: Material causing other toxic effects (TOXIC).

DSCL (EEC):
R11- Highly flammable. R36- Irritating to eyes. S9- Keep container in a well-ventilated place. S16- Keep away from sources of ignition - No smoking. S26- In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

HMIS (U.S.A.):

Health Hazard: 2

Fire Hazard: 3

Reactivity: 0

Personal Protection: h

National Fire Protection Association (U.S.A.):

Health: 1

Flammability: 3

Reactivity: 0

Specific hazard:

Protective Equipment:
Gloves. Lab coat. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Splash goggles.

Section 16: Other Information

References:
-Material safety data sheet issued by: la Commission de la SantÃ© et de la SÃ©curitÃ© du Travail du QuÃ©bec. -The Sigma-Aldrich Library of Chemical Safety Data, Edition II. -Hawley, G.G.. The Condensed Chemical Dictionary, 11e ed., New York N.Y., Van Nostrand Reinold, 1987. LOLI, RTECS, HSDB databases. Other MSDSs

Other Special Considerations: Not available.

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Last Updated: 11/01/2010 12:00 PM

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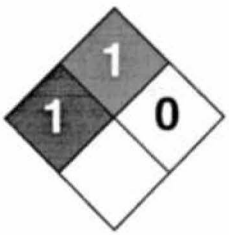

Health	1
Fire	1
Reactivity	0
Personal Protection	C

Material Safety Data Sheet
Ethylene glycol MSDS

Section 1: Chemical Product and Company Identification

Product Name: Ethylene glycol

Catalog Codes: SLE1072

CAS#: 107-21-1

RTECS: KW2975000

TSCA: TSCA 8(b) inventory: Ethylene glycol

CI#: Not available.

Synonym: 1,2-Dihydroxyethane; 1,2-Ethanediol; 1,2-Ethandiol; Ethylene dihydrate; Glycol alcohol; Monoethylene glycol; Tescol

Chemical Name: Ethylene Glycol

Chemical Formula: HOCH2CH2OH

Contact Information:

Sciencelab.com, Inc.
14025 Smith Rd.
Houston, Texas 77396

US Sales: **1-800-901-7247**
International Sales: **1-281-441-4400**

Order Online: ScienceLab.com

CHEMTREC (24HR Emergency Telephone), call: 1-800-424-9300

International CHEMTREC, call: 1-703-527-3887

For non-emergency assistance, call: 1-281-441-4400

Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #	% by Weight
Ethylene glycol	107-21-1	100

Toxicological Data on Ingredients: Ethylene glycol: ORAL (LD50): Acute: 4700 mg/kg [Rat]. 5500 mg/kg [Mouse]. 6610 mg/kg [Guinea pig]. VAPOR (LC50): Acute: >200 mg/m 4 hours [Rat].

Section 3: Hazards Identification

Potential Acute Health Effects:
Hazardous in case of ingestion. Slightly hazardous in case of skin contact (irritant, permeator), of eye contact (irritant), of inhalation. Severe over-exposure can result in death.

Potential Chronic Health Effects:
CARCINOGENIC EFFECTS: A4 (Not classifiable for human or animal.) by ACGIH. MUTAGENIC EFFECTS: Mutagenic for mammalian somatic cells. Non-mutagenic for bacteria and/or yeast. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. The substance may be toxic to kidneys, liver, central nervous system (CNS). Repeated or prolonged exposure to the substance can produce target organs damage. Repeated exposure to a highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.

Section 4: First Aid Measures

Eye Contact:
Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention if irritation occurs.

Skin Contact:
Wash with soap and water. Cover the irritated skin with an emollient. Get medical attention if irritation develops. Cold water may be used.

Serious Skin Contact: Not available.

Inhalation:
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.

Serious Inhalation: Not available.

Ingestion:
Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.

Serious Ingestion:
Medical Conditions Aggravated by Exposure: Persons with pre-existiing kidney, respiratory, eye, or neurological problems might be more sensitive to Ethylene Glycol. Notes to Physician: 1. Support vital functions, correct for dehydration and shock, and manage fluid balance. 2. The currently recommended medical management of Ethylene Glycol poisoning includes elimination of Ethylene Glycol and metabolites. Elimination of Ethylene Glycol may be achieved by the following methods: a. Emptying the stomach by gastric lavage. It is useful if initiated within < 1 of ingestion. b. Correct metabolic acidosis with intravenous administration of sodium bicarbonate, adjusting the administration rate accoridng to repeated and frequent measurement of acid/base status. c. Administer ethanol (orally or by IV (intravenously)) or fomepizole (4-methylpyrazole or Antizol)) therapy by IV as an antidote to inhibit the ormation of toxic metabolites. d. If patients are diagnosed and treated early in the course with the above methods, hemodialysis may be avoided if fomepizole or ethanol therapy is effective and has corrected the metabolic acidosis, and no renal failure is present. However, once severe acidosis and renal failure occured, however, hemodialysis is necessary. It is effective in removing Ethylene Glycol and toxic metabolites, and correcting metabolic acidosis.

Section 5: Fire and Explosion Data

Flammability of the Product: May be combustible at high temperature.

Auto-Ignition Temperature: 398°C (748.4°F)

Flash Points: CLOSED CUP: 111°C (231.8°F). (Tagliabue.)

Flammable Limits: LOWER: 3.2%

Products of Combustion: These products are carbon oxides (CO, CO2).

Fire Hazards in Presence of Various Substances:
Slightly flammable to flammable in presence of open flames and sparks, of heat. Non-flammable in presence of shocks.

Explosion Hazards in Presence of Various Substances:
Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.

Fire Fighting Media and Instructions:
SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray, fog or foam. Do not use water jet.

Special Remarks on Fire Hazards: Not available.

Special Remarks on Explosion Hazards:
Explosive decomposition may occur if combined with strong acids or strong bases and subjected to elevated temperatures.

Section 6: Accidental Release Measures

Small Spill:
Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.

Large Spill:
Stop leak if without risk. Do not get water inside container. Do not touch spilled material. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed. Eliminate all ignition sources. Call for assistance on disposal. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

Section 7: Handling and Storage

Precautions:
Keep away from heat. Keep away from sources of ignition. Empty containers pose a fire risk, evaporate the residue under a fume hood. Ground all equipment containing material. Do not ingest. Do not breathe gas/fumes/ vapor/spray. Wear suitable protective clothing. If ingested, seek medical advice immediately and show the container or the label. Keep away from incompatibles such as oxidizing agents, acids, alkalis.

Storage: Keep container tightly closed. Keep container in a cool, well-ventilated area. Hygroscopic

Section 8: Exposure Controls/Personal Protection

Engineering Controls:
Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.

Personal Protection:
Safety glasses. Synthetic apron. Gloves (impervious). For most conditions, no respiratory protection should be needed. However, if material is heated or sprayed and if atmospheric levels exceed exposure guidelines, use an approved vapor (air purifying) respirator.

Personal Protection in Case of a Large Spill:
Splash goggles. Full suit. Boots. Gloves. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits:
STEL: 120 (mg/m3) [Australia] TWA: 100 (mg/m3) from ACGIH (TLV) [United States] CEIL: 125 (mg/m3) from OSHA (PEL) [United States] CEIL: 50 (ppm) from OSHA (PEL) [United States] TWA: 52 STEL: 104 (mg/m3) [United Kingdom (UK)] Inhalation TWA: 10 (mg/m3) [United Kingdom (UK)] SKIN3 Consult local authorities for acceptable exposure limits.

Section 9: Physical and Chemical Properties

Physical state and appearance: Liquid. (syrupy)

Odor: Odorless.

Taste: Mild sweet

Molecular Weight: 62.07 g/mole

Color: Clear Colorless.

pH (1% soln/water): Not available.

Boiling Point: 197.6°C (387.7°F)

Melting Point: -13°C (8.6°F)

Critical Temperature: Not available.

Specific Gravity: 1.1088 (Water = 1)

Vapor Pressure: .06 mmHg @ 20 C; .092 mmHg at 25 C

Vapor Density: 2.14 (Air = 1)

Volatility: Not available.

Odor Threshold: Not available.

Water/Oil Dist. Coeff.: The product is more soluble in water; log(oil/water) = -1.4

Ionicity (in Water): Not available.

Dispersion Properties: See solubility in water, acetone.

Solubility:
Soluble in cold water, hot water, acetone. Slightly soluble in diethyl ether. Miscible with lower aliphatic alcohols, glycerol, acetic acid, acetone and similar ketones, aldehydes, pyridine, similar coal tar bases. Practically insoluble in benzene and its homologs, chlorinated hydrocarbons, petroleum ether.

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Excess heat, incompatible materials.

Incompatibility with various substances: Reactive with oxidizing agents, acids, alkalis.

Corrosivity: Non-corrosive in presence of glass.

Special Remarks on Reactivity:
Hygroscopic. Absorbs moisture from the air. Avoid contamination with materials with hydroxyl compounds. Also incompatible with aliphatic amines, isocyanates, chlorosulfonic acid, and oleum

Special Remarks on Corrosivity: Not available.

Polymerization: Will not occur.

Section 11: Toxicological Information

Routes of Entry: Absorbed through skin. Ingestion.

Toxicity to Animals:
Acute oral toxicity (LD50): 4700 mg/kg [Rat]. Acute toxicity of the vapor (LC50): >200 mg/m3 4 hours [Rat].

Chronic Effects on Humans:
CARCINOGENIC EFFECTS: A4 (Not classifiable for human or animal.) by ACGIH. MUTAGENIC EFFECTS: Mutagenic for mammalian somatic cells. Non-mutagenic for bacteria and/or yeast. May cause damage to the following organs: kidneys, liver, central nervous system (CNS).

Other Toxic Effects on Humans:
Hazardous in case of ingestion. Slightly hazardous in case of skin contact (irritant, permeator), of inhalation.

Special Remarks on Toxicity to Animals:
Lowest Published Toxic Dose/Conc: TDL [Man] - Route: oral; Dose: 15gm/kg Lethal Dose/Conc 50% Kill LD50 [Rabbit] - Route: dermal; Dose: 9530 ul/kg

Special Remarks on Chronic Effects on Humans:
May cause adverse reproductive effects and birth defects (teratogenic) based on animal test data. No human data has been reported at this time. May affect genetic material (mutagenic)

Special Remarks on other Toxic Effects on Humans:
Acute Potential Health Effects: Skin: May cause skin irritation. May cause more severe response if skin is abraded. A single prolonged exposure is not likely to result in material being absorbed through skin in harmful amounts. Massive contact with damaged skin may result in absorption of potentially harmful amounts Eyes: Vapors or mist may cause temporary eye irritation (mild temporary conjunctival inflammation) and lacrimation. Corneal injury is unlikely or insignificant.. Ingestion: It is rapidly absorbed from the gastrointestinal tract. Oral toxicity is expected to be moderate in humans due to Ethylene Glycol even though tests with animals show a lower degree of toxicity. Excessive exposure (swallowing large amounts) may cause gastrointestinal tract irritation with nausea, vomiting, abdominal discomfort, diarrhea. It can affect behavior/central nervous system within 0.5 to 12 hours after ingestion. A transient inebriation with excitement, stupor, headache, slurred speech, ataxia, somnolence, and euphoria, similar to ethanol intoxication, can occur within the first several hours. As sthe Ethylene Glycol is metabolized, metabolic acidosis and further central nervous system depression (convulsions, muscle weakness) develop. Serious intoxication may develop to coma associated with hypotonia, hyporeflexia, and less commonly seizures, and meningismus. 12 to 24 hours

Section 12: Ecological Information

Ecotoxicity:
Ecotoxicity in water (LC50): 41000 mg/l 96 hours [Fish (Trout)]. 46300 mg/l 48 hours [water flea]. 34250 mg/l 96 hours [Fish (bluegill fish)]. 34250 mg/l 72 hours [Fish (Goldfish)].

BOD5 and COD: Not available.

Products of Biodegradation:
Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The products of degradation are less toxic than the product itself.

Special Remarks on the Products of Biodegradation: Not available.

Section 13: Disposal Considerations

Waste Disposal:
Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14: Transport Information

DOT Classification: Not a DOT controlled material (United States).

Identification: Not applicable.

Special Provisions for Transport: Not applicable.

Section 15: Other Regulatory Information

Federal and State Regulations:
Illinois toxic substances disclosure to employee act: Ethylene glycol Illinois chemical safety act: Ethylene glycol New York release reporting list: Ethylene glycol Rhode Island RTK hazardous substances: Ethylene glycol Pennsylvania RTK: Ethylene glycol Minnesota: Ethylene glycol Massachusetts RTK: Ethylene glycol Massachusetts spill list: Ethylene glycol New Jersey: Ethylene glycol Louisiana spill reporting: Ethylene glycol TSCA 8(b) inventory: Ethylene glycol TSCA 4(a) proposed test rules: Ethylene glycol SARA 313 toxic chemical notification and release reporting: Ethylene glycol CERCLA: Hazardous substances.: Ethylene glycol: 5000 lbs. (2268 kg)

Other Regulations:
OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200). EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances.

Other Classifications:

WHMIS (Canada): CLASS D-2A: Material causing other toxic effects (VERY TOXIC).

DSCL (EEC):
R22- Harmful if swallowed. S46- If swallowed, seek medical advice immediately and show this container or label.

HMIS (U.S.A.):

Health Hazard: 1

Fire Hazard: 1

Reactivity: 0

Personal Protection: C

National Fire Protection Association (U.S.A.):

Health: 1

Flammability: 1

Reactivity: 0

Specific hazard:

Protective Equipment:
Gloves. Lab coat. Not applicable. Safety glasses.

Section 16: Other Information

References: Not available.

Other Special Considerations: Not available.

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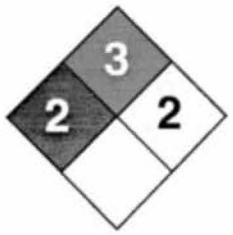

Health	2
Fire	3
Reactivity	0
Personal Protection	H

Material Safety Data Sheet
Styrene (monomer) MSDS

Section 1: Chemical Product and Company Identification

Product Name: Styrene (monomer)

Catalog Codes: SLS2512, SLU1027

CAS#: 100-42-5

RTECS: WL3675000

TSCA: TSCA 8(b) inventory: Styrene (monomer)

CI#: Not available.

Synonym: Vinylbenzene

Chemical Formula: C8H8

Contact Information:

Sciencelab.com, Inc.
14025 Smith Rd.
Houston, Texas 77396

US Sales: **1-800-901-7247**
International Sales: **1-281-441-4400**

Order Online: ScienceLab.com

CHEMTREC (24HR Emergency Telephone), call:
1-800-424-9300

International CHEMTREC, call: 1-703-527-3887

For non-emergency assistance, call: 1-281-441-4400

Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #	% by Weight
Styrene (monomer)	100-42-5	100

Toxicological Data on Ingredients: Styrene (monomer): ORAL (LD50): Acute: 2650 mg/kg [Rat]. 316 mg/kg [Mouse]. VAPOR (LC50): Acute: 12000 ppm 4 hour(s) [Rat]. 9500 ppm 4 hour(s) [Mouse].

Section 3: Hazards Identification

Potential Acute Health Effects:
Very hazardous in case of eye contact (irritant). Hazardous in case of skin contact (irritant, permeator), of ingestion, of inhalation. Inflammation of the eye is characterized by redness, watering, and itching.

Potential Chronic Health Effects:
CARCINOGENIC EFFECTS: Classified + (PROVEN) by OSHA. Classified 2B (Possible for human.) by IARC. A4 (Not classifiable for human or animal.) by ACGIH. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. The substance is toxic to the nervous system, upper respiratory tract. Repeated or prolonged exposure to the substance can produce target organs damage.

Section 4: First Aid Measures

Eye Contact:

Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Cold water may be used. Do not use an eye ointment. Seek medical attention.

Skin Contact:
After contact with skin, wash immediately with plenty of water. Gently and thoroughly wash the contaminated skin with running water and non-abrasive soap. Be particularly careful to clean folds, crevices, creases and groin. Cover the irritated skin with an emollient. If irritation persists, seek medical attention. Wash contaminated clothing before reusing.

Serious Skin Contact:
Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek immediate medical attention.

Inhalation: Allow the victim to rest in a well ventilated area. Seek immediate medical attention.

Serious Inhalation: Not available.

Ingestion:
Do not induce vomiting. Examine the lips and mouth to ascertain whether the tissues are damaged, a possible indication that the toxic material was ingested; the absence of such signs, however, is not conclusive. Loosen tight clothing such as a collar, tie, belt or waistband. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek immediate medical attention.

Serious Ingestion: Not available.

Section 5: Fire and Explosion Data

Flammability of the Product: Flammable.

Auto-Ignition Temperature: 490°C (914°F)

Flash Points: CLOSED CUP: 31.1°C (88°F). (Cleveland) OPEN CUP: 36.7°C (98.1°F) (TAG).

Flammable Limits: LOWER: 1.1% UPPER: 6.1%

Products of Combustion: These products are carbon oxides (CO, CO2).

Fire Hazards in Presence of Various Substances:
Flammable in presence of open flames and sparks. Slightly flammable to flammable in presence of heat.

Explosion Hazards in Presence of Various Substances:
Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.

Fire Fighting Media and Instructions:
Flammable liquid, soluble or dispersed in water. SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use alcohol foam, water spray or fog. Cool containing vessels with water jet in order to prevent pressure build-up, autoignition or explosion.

Special Remarks on Fire Hazards: Not available.

Special Remarks on Explosion Hazards: Not available.

Section 6: Accidental Release Measures

Small Spill: Absorb with an inert material and put the spilled material in an appropriate waste disposal.

Large Spill:
Flammable liquid. Keep away from heat. Keep away from sources of ignition. Stop leak if without risk. Absorb with DRY earth, sand or other non-combustible material. Do not touch spilled material. Prevent entry into sewers, basements or confined areas; dike if needed. Eliminate all ignition sources. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

Section 7: Handling and Storage

Precautions:
Keep locked up Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not ingest. Do not breathe gas/fumes/ vapour/spray. In case of insufficient ventilation, wear suitable respiratory equipment If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes

Storage:
Flammable materials should be stored in a separate safety storage cabinet or room. Keep away from heat. Keep away from sources of ignition. Keep container tightly closed. Keep in a cool, well-ventilated place. Ground all equipment containing material. A refrigerated room would be preferable for materials with a flash point lower than 37.8°C (100°F).

Section 8: Exposure Controls/Personal Protection

Engineering Controls:
Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.

Personal Protection:
Splash goggles. Lab coat. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

Personal Protection in Case of a Large Spill:
Splash goggles. Full suit. Vapor respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits:
TWA: 50 STEL: 100 (ppm) TWA: 213 STEL: 426 (mg/m3) Consult local authorities for acceptable exposure limits.

Section 9: Physical and Chemical Properties

Physical state and appearance: Liquid. (Clear viscous liquid.)

Odor: Sweetish. Aromatic.

Taste: Not available.

Molecular Weight: 104.14 g/mole

Color: Colorless.

pH (1% soln/water): Not available.

Boiling Point: 145.2°C (293.4°F)

Melting Point: -30.6°C (-23.1°F)

Critical Temperature: Not available.

Specific Gravity: 0.906 (Water = 1)

Vapor Pressure: 4.5 mm of Hg (@ 20°C)

Vapor Density: 3.59 (Air = 1)

Volatility: Not available.

Odor Threshold: 0.1 ppm

Water/Oil Dist. Coeff.: The product is equally soluble in oil and water; log(oil/water) = 0

Ionicity (in Water): Not available.

Dispersion Properties: Not available.

Solubility: Very slightly soluble in cold water.

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Not available.

Incompatibility with various substances: Not available.

Corrosivity: Non-corrosive in presence of glass.

Special Remarks on Reactivity: Not available.

Special Remarks on Corrosivity: Not available.

Polymerization: No.

Section 11: Toxicological Information

Routes of Entry: Dermal contact. Eye contact. Inhalation. Ingestion.

Toxicity to Animals:
WARNING: THE LC50 VALUES HEREUNDER ARE ESTIMATED ON THE BASIS OF A 4-HOUR EXPOSURE. Acute oral toxicity (LD50): 316 mg/kg [Mouse]. Acute toxicity of the vapor (LC50): 9500 ppm 4 hour(s) [Mouse].

Chronic Effects on Humans:
CARCINOGENIC EFFECTS: Classified + (PROVEN) by OSHA. Classified 2B (Possible for human.) by IARC. A4 (Not classifiable for human or animal.) by ACGIH. The substance is toxic to the nervous system, upper respiratory tract.

Other Toxic Effects on Humans: Hazardous in case of skin contact (irritant, permeator), of ingestion, of inhalation.

Special Remarks on Toxicity to Animals: Not available.

Special Remarks on Chronic Effects on Humans:
Animal embryotoxic. Postnatal development injury in animal. Menstrual disorders in human. Human: passes the placental barrier, detected in maternal milk.

Special Remarks on other Toxic Effects on Humans: Not available.

Section 12: Ecological Information

Ecotoxicity: Not available.

BOD5 and COD: Not available.

Products of Biodegradation:
Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The products of degradation are more toxic.

Special Remarks on the Products of Biodegradation: Not available.

Section 13: Disposal Considerations

Waste Disposal:

Section 14: Transport Information

DOT Classification: Class 3: Flammable liquid.

Identification: : Styrene monomer, inhibited : UN2055 PG: III

Special Provisions for Transport: Marine Pollutant

Section 15: Other Regulatory Information

Federal and State Regulations:
Pennsylvania RTK: Styrene (monomer) Florida: Styrene (monomer) Minnesota: Styrene (monomer) Massachusetts RTK: Styrene (monomer) New Jersey: Styrene (monomer) TSCA 8(b) inventory: Styrene (monomer) SARA 313 toxic chemical notification and release reporting: Styrene (monomer) CERCLA: Hazardous substances.: Styrene (monomer)

Other Regulations: OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200).

Other Classifications:

WHMIS (Canada):
CLASS B-2: Flammable liquid with a flash point lower than 37.8°C (100°F). CLASS D-2A: Material causing other toxic effects (VERY TOXIC).

DSCL (EEC):
R10- Flammable. R38- Irritating to skin. R41- Risk of serious damage to eyes. R45- May cause cancer.

HMIS (U.S.A.):

Health Hazard: 2

Fire Hazard: 3

Reactivity: 0

Personal Protection: h

National Fire Protection Association (U.S.A.):

Health: 2

Flammability: 3

Reactivity: 2

Specific hazard:

Protective Equipment:
Gloves. Lab coat. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Splash goggles.

Section 16: Other Information

References: Not available.

Other Special Considerations: Not available.

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Last Updated: 11/01/2010 12:00 PM

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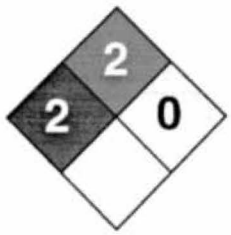

Health	2
Fire	2
Reactivity	0
Personal Protection	H

Material Safety Data Sheet
Stoddard solvent MSDS

Section 1: Chemical Product and Company Identification

Product Name: Stoddard solvent

Catalog Codes: SLS3688

CAS#: 8052-41-3

RTECS: WJ8925000

TSCA: TSCA 8(b) inventory: Stoddard solvent

CI#: Not available.

Synonym:

Chemical Name: Not available.

Chemical Formula: Not available.

Contact Information:

Sciencelab.com, Inc.
14025 Smith Rd.
Houston, Texas 77396

US Sales: **1-800-901-7247**
International Sales: **1-281-441-4400**

Order Online: ScienceLab.com

CHEMTREC (24HR Emergency Telephone), call:
1-800-424-9300

International CHEMTREC, call: 1-703-527-3887

For non-emergency assistance, call: 1-281-441-4400

Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #	% by Weight
Stoddard solvent	8052-41-3	100

Toxicological Data on Ingredients: Stoddard solvent LD50: Not available. LC50: Not available.

Section 3: Hazards Identification

Potential Acute Health Effects:
Very hazardous in case of ingestion. Hazardous in case of skin contact (irritant), of eye contact (irritant), of inhalation.

Potential Chronic Health Effects:
Very hazardous in case of ingestion. Hazardous in case of skin contact (irritant), of eye contact (irritant), of inhalation. CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. The substance is toxic to lungs, the nervous system, mucous membranes. Repeated or prolonged exposure to the substance can produce target organs damage.

Section 4: First Aid Measures

Eye Contact: Check for and remove any contact lenses. Do not use an eye ointment. Seek medical attention.

Skin Contact:

After contact with skin, wash immediately with plenty of water. Gently and thoroughly wash the contaminated skin with running water and non-abrasive soap. Be particularly careful to clean folds, crevices, creases and groin. Cover the irritated skin with an emollient. If irritation persists, seek medical attention. Wash contaminated clothing before reusing.

Serious Skin Contact:
Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek medical attention.

Inhalation: Allow the victim to rest in a well ventilated area. Seek immediate medical attention.

Serious Inhalation:
Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek medical attention.

Ingestion:
Do not induce vomiting. Loosen tight clothing such as a collar, tie, belt or waistband. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek immediate medical attention.

Serious Ingestion: Not available.

Section 5: Fire and Explosion Data

Flammability of the Product: Flammable.

Auto-Ignition Temperature: 210°C (410°F)

Flash Points: CLOSED CUP: 38°C (100.4°F).

Flammable Limits: LOWER: 0.8% UPPER: 5%

Products of Combustion: Not available.

Fire Hazards in Presence of Various Substances: Slightly flammable to flammable in presence of oxidizing materials.

Explosion Hazards in Presence of Various Substances:
Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available. Slightly explosive to explosive in presence of oxidizing materials.

Fire Fighting Media and Instructions:
Flammable liquid, insoluble in water. SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray or fog. Cool containing vessels with water jet in order to prevent pressure build-up, autoignition or explosion.

Special Remarks on Fire Hazards: Not available.

Special Remarks on Explosion Hazards: Not available.

Section 6: Accidental Release Measures

Small Spill: Absorb with an inert material and put the spilled material in an appropriate waste disposal.

Large Spill:
Flammable liquid, insoluble in water. Keep away from heat. Keep away from sources of ignition. Stop leak if without risk. Absorb with DRY earth, sand or other non-combustible material. Do not get water inside container. Do not touch spilled material. Prevent entry into sewers, basements or confined areas; dike if needed. Eliminate all ignition sources. Call for assistance on disposal. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

Section 7: Handling and Storage

Precautions:

Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not breathe gas/ fumes/ vapour/spray. Wear suitable protective clothing In case of insufficient ventilation, wear suitable respiratory equipment If you feel unwell, seek medical attention and show the label when possible. Avoid contact with skin and eyes

Storage:
Flammable materials should be stored in a separate safety storage cabinet or room. Keep away from heat. Keep away from sources of ignition. Keep container tightly closed. Keep in a cool, well-ventilated place. Ground all equipment containing material. Keep container dry. Keep in a cool place.

Section 8: Exposure Controls/Personal Protection

Engineering Controls:
Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.

Personal Protection:
Splash goggles. Lab coat. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

Personal Protection in Case of a Large Spill:
Splash goggles. Full suit. Vapor respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits:
TWA: 100 (ppm) from ACGIH (TLV) TWA: 525 (mg/m3) from ACGIHConsult local authorities for acceptable exposure limits.

Section 9: Physical and Chemical Properties

Physical state and appearance: Liquid.

Odor: Not available.

Taste: Not available.

Molecular Weight: Not available.

Color: Clear Colorless.

pH (1% soln/water): Not applicable.

Boiling Point: Not available.

Melting Point: Not available.

Critical Temperature: Not available.

Specific Gravity: 0.78 (Water = 1)

Vapor Pressure: 2 mm of Hg (@ 20°C)

Vapor Density: 5 (Air = 1)

Volatility: Not available.

Odor Threshold: 1 ppm

Water/Oil Dist. Coeff.: Not available.

Ionicity (in Water): Not available.

Dispersion Properties: Not available.

Solubility: Insoluble in cold water.

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Not available.

Incompatibility with various substances: Not available.

Corrosivity: Non-corrosive in presence of glass.

Special Remarks on Reactivity: Not available.

Special Remarks on Corrosivity: Not available.

Polymerization: No.

Section 11: Toxicological Information

Routes of Entry: Eye contact. Inhalation. Ingestion.

Toxicity to Animals:
LD50: Not available. LC50: Not available.

Chronic Effects on Humans: The substance is toxic to lungs, the nervous system, mucous membranes.

Other Toxic Effects on Humans:
Very hazardous in case of ingestion. Hazardous in case of skin contact (irritant), of inhalation.

Special Remarks on Toxicity to Animals: Not available.

Special Remarks on Chronic Effects on Humans: Not available.

Special Remarks on other Toxic Effects on Humans: Not available.

Section 12: Ecological Information

Ecotoxicity: Not available.

BOD5 and COD: Not available.

Products of Biodegradation:
Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The products of degradation are more toxic.

Special Remarks on the Products of Biodegradation: Not available.

Section 13: Disposal Considerations

Waste Disposal:

Section 14: Transport Information

DOT Classification: Class 3: Flammable liquid.

Identification: : Petroleum distillate, n.o.s. (Stoddard solvent) : UN1268 PG: III

Special Provisions for Transport: Not available.

Section 15: Other Regulatory Information

Federal and State Regulations:
Pennsylvania RTK: Stoddard solvent Massachusetts RTK: Stoddard solvent TSCA 8(b) inventory: Stoddard solvent

Other Regulations: OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200).

Other Classifications:

WHMIS (Canada):
CLASS B-3: Combustible liquid with a flash point between 37.8°C (100°F) and 93.3°C (200°F).

DSCL (EEC):
R10- Flammable. R36/38- Irritating to eyes and skin.

HMIS (U.S.A.):

Health Hazard: 2

Fire Hazard: 2

Reactivity: 0

Personal Protection: h

National Fire Protection Association (U.S.A.):

Health: 2

Flammability: 2

Reactivity: 0

Specific hazard:

Protective Equipment:
Gloves. Lab coat. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Splash goggles.

Section 16: Other Information

References: Not available.

Other Special Considerations: Not available.

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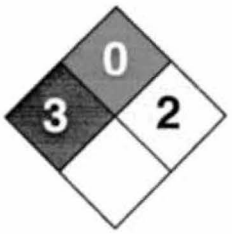

Health	3
Fire	0
Reactivity	2
Personal Protection	J

Material Safety Data Sheet
Barium oxide MSDS

Section 1: Chemical Product and Company Identification

Product Name: Barium oxide

Catalog Codes: SLB4825

CAS#: 1304-28-5

RTECS: CQ9800000

TSCA: TSCA 8(b) inventory: Barium oxide

CI#: Not available.

Synonym:

Chemical Formula: BaO

Contact Information:

Sciencelab.com, Inc.
14025 Smith Rd.
Houston, Texas 77396

US Sales: **1-800-901-7247**
International Sales: **1-281-441-4400**

Order Online: ScienceLab.com

CHEMTREC (24HR Emergency Telephone), call:
1-800-424-9300

International CHEMTREC, call: 1-703-527-3887

For non-emergency assistance, call: 1-281-441-4400

Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #	% by Weight
Barium oxide	1304-28-5	100

Toxicological Data on Ingredients: Barium oxide LD50: Not available. LC50: Not available.

Section 3: Hazards Identification

Potential Acute Health Effects:
Extremely hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion. Very hazardous in case of skin contact (corrosive), of inhalation. The amount of tissue damage depends on length of contact. Eye contact can result in corneal damage or blindness. Skin contact can produce inflammation and blistering. Inhalation of dust will produce irritation to gastro-intestinal or respiratory tract, characterized by burning, sneezing and coughing. Severe over-exposure can produce lung damage, choking, unconsciousness or death. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering.

Potential Chronic Health Effects:
Extremely hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion. Very hazardous in case of skin contact (corrosive), of inhalation. CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. The substance is toxic to lungs, mucous membranes. Repeated or prolonged exposure to the substance can produce target organs damage. Repeated exposure of the eyes to a low level of dust can produce eye irritation. Repeated skin exposure can produce local skin destruction, or dermatitis. Repeated inhalation of dust can produce varying degree of respiratory irritation or lung damage.

Repeated exposure to a highly toxic material may produce general deterioration of health by an accumulation in one or many human organs. Repeated or prolonged inhalation of dust may lead to chronic respiratory irritation.

Section 4: First Aid Measures

Eye Contact:
Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention immediately.

Skin Contact:
In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Cover the irritated skin with an emollient. Cold water may be used.Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.

Serious Skin Contact:
Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek immediate medical attention.

Inhalation:
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.

Serious Inhalation:
Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. WARNING: It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled material is toxic, infectious or corrosive. Seek immediate medical attention.

Ingestion:
If swallowed, do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.

Serious Ingestion: Not available.

Section 5: Fire and Explosion Data

Flammability of the Product: Non-flammable.

Auto-Ignition Temperature: Not applicable.

Flash Points: Not applicable.

Flammable Limits: Not applicable.

Products of Combustion: Not available.

Fire Hazards in Presence of Various Substances: Not applicable.

Explosion Hazards in Presence of Various Substances:
Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.

Fire Fighting Media and Instructions: Not applicable.

Special Remarks on Fire Hazards: Not available.

Special Remarks on Explosion Hazards: Not available.

Section 6: Accidental Release Measures

Small Spill: Use appropriate tools to put the spilled solid in a convenient waste disposal container.

Large Spill:
Corrosive solid. Poisonous solid. Stop leak if without risk. Do not get water inside container. Do not touch spilled material. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed. Call for assistance on disposal. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

Section 7: Handling and Storage

Precautions:
Keep locked up.. Keep container dry. Do not ingest. Do not breathe dust. Never add water to this product. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles such as acids, moisture.

Storage: Keep container tightly closed. Keep container in a cool, well-ventilated area.

Section 8: Exposure Controls/Personal Protection

Engineering Controls:
Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Personal Protection:
Splash goggles. Synthetic apron. Vapor and dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

Personal Protection in Case of a Large Spill:
Splash goggles. Full suit. Vapor and dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits:
TWA: 0.5 Consult local authorities for acceptable exposure limits.

Section 9: Physical and Chemical Properties

Physical state and appearance: Solid. (Powdered solid.)

Odor: Odorless.

Taste: Not available.

Molecular Weight: 153.36 g/mole

Color: White to yellowish.

pH (1% soln/water): Not available.

Boiling Point: 2000°C (3632°F)

Melting Point: 1918°C (3484.4°F)

Critical Temperature: Not available.

Specific Gravity: 5.72 (Water = 1)

Vapor Pressure: Not applicable.

Vapor Density: Not available.

Volatility: Not available.

Odor Threshold: Not available.

Water/Oil Dist. Coeff.: Not available.

Ionicity (in Water): Not available.

Dispersion Properties: See solubility in water, methanol.

Solubility: Partially soluble in cold water, methanol.

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Not available.

Incompatibility with various substances:
Highly reactive with acids. Reactive with moisture.

Corrosivity: Non-corrosive in presence of glass.

Special Remarks on Reactivity: Not available.

Special Remarks on Corrosivity: Not available.

Polymerization: Will not occur.

Section 11: Toxicological Information

Routes of Entry: Eye contact. Inhalation. Ingestion.

Toxicity to Animals:
LD50: Not available. LC50: Not available.

Chronic Effects on Humans: Causes damage to the following organs: lungs, mucous membranes.

Other Toxic Effects on Humans:
Extremely hazardous in case of skin contact (irritant), of ingestion. Very hazardous in case of skin contact (corrosive), . Hazardous in case of eye contact (corrosive), of inhalation (lung corrosive).

Special Remarks on Toxicity to Animals: Not available.

Special Remarks on Chronic Effects on Humans: Excreted in maternal milk in animal. Passes through the placental barrier in human.

Special Remarks on other Toxic Effects on Humans: Not available.

Section 12: Ecological Information

Ecotoxicity: Not available.

BOD5 and COD: Not available.

Products of Biodegradation:
Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The products of degradation are as toxic as the original product.

Special Remarks on the Products of Biodegradation: Not available.

Section 13: Disposal Considerations

Waste Disposal:

Section 14: Transport Information

DOT Classification: CLASS 6.1: Poisonous material.

Identification: : Barium Oxide UNNA: UN1884 PG: III

Special Provisions for Transport: Marine Pollutant

Section 15: Other Regulatory Information

Federal and State Regulations:
Pennsylvania RTK: Barium oxide Massachusetts RTK: Barium oxide TSCA 8(b) inventory: Barium oxide SARA 313 toxic chemical notification and release reporting: Barium oxide

Other Regulations: OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200).

Other Classifications:

WHMIS (Canada):
CLASS D-1B: Material causing immediate and serious toxic effects (TOXIC). CLASS D-2B: Material causing other toxic effects (TOXIC).

DSCL (EEC): R34- Causes burns.

HMIS (U.S.A.):

Health Hazard: 3

Fire Hazard: 0

Reactivity: 2

Personal Protection: j

National Fire Protection Association (U.S.A.):

Health: 3

Flammability: 0

Reactivity: 2

Specific hazard:

Protective Equipment:
Gloves. Synthetic apron. Vapor and dust respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Splash goggles.

Section 16: Other Information

References: Not available.

Other Special Considerations: Not available.

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MATERIAL SAFETY DATA SHEET

81300
02 00

DATE OF PREPARATION
Apr 28, 2011

SECTION 1 — PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NUMBER
81300
PRODUCT NAME
DURA SEAL® Polyurethane, Gloss
MANUFACTURER'S NAME
MINWAX Company
10 Mountainview Road
Upper Saddle River, NJ 07458

Telephone Numbers and Websites

Product Information	(800) 364-1359
Regulatory Information	(216) 566-2902 www.paintdocs.com
Medical Emergency	(216) 566-2917
Transportation Emergency*	(800) 424-9300
**for Chemical Emergency ONLY (spill, leak, fire, exposure, or accident)*	

SECTION 2 — COMPOSITION/INFORMATION ON INGREDIENTS

% by Weight	CAS Number	Ingredient	Units	Vapor Pressure
56	64742-88-7	**Mineral Spirits**		
		ACGIH TLV	100 PPM	2 mm
		OSHA PEL	100 PPM	

SECTION 3 — HAZARDS IDENTIFICATION

ROUTES OF EXPOSURE
INHALATION of vapor or spray mist.
EYE or SKIN contact with the product, vapor or spray mist.

HMIS Codes

Health	2
Flammability	2
Reactivity	0

EFFECTS OF OVEREXPOSURE
EYES: Irritation.
SKIN: Prolonged or repeated exposure may cause irritation.
INHALATION: Irritation of the upper respiratory system.

May cause nervous system depression. Extreme overexposure may result in unconsciousness and possibly death.
Prolonged overexposure to hazardous ingredients in Section 2 may cause adverse chronic effects to the following organs or systems:
- the liver
- the urinary system

SIGNS AND SYMPTOMS OF OVEREXPOSURE
Headache, dizziness, nausea, and loss of coordination are indications of excessive exposure to vapors or spray mists.
Redness and itching or burning sensation may indicate eye or excessive skin exposure.
MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE
None generally recognized.
CANCER INFORMATION
For complete discussion of toxicology data refer to Section 11.

SECTION 4 — FIRST AID MEASURES

EYES: Flush eyes with large amounts of water for 15 minutes. Get medical attention.
SKIN: Wash affected area thoroughly with soap and water.
Remove contaminated clothing and launder before re-use.
INHALATION: If affected, remove from exposure. Restore breathing. Keep warm and quiet.
INGESTION: Do not induce vomiting. Get medical attention immediately.

SECTION 5 — FIRE FIGHTING MEASURES

FLASH POINT	LEL	UEL	FLAMMABILITY CLASSIFICATION
103 °F PMCC	1.0	6.0	Combustible, Flash above 99 and below 200 °F

EXTINGUISHING MEDIA

Carbon Dioxide, Dry Chemical, Foam

UNUSUAL FIRE AND EXPLOSION HAZARDS

Closed containers may explode when exposed to extreme heat.

Application to hot surfaces requires special precautions.

During emergency conditions overexposure to decomposition products may cause a health hazard. Symptoms may not be immediately apparent. Obtain medical attention.

SPECIAL FIRE FIGHTING PROCEDURES

Full protective equipment including self-contained breathing apparatus should be used.

Water spray may be ineffective. If water is used, fog nozzles are preferable. Water may be used to cool closed containers to prevent pressure build-up and possible autoignition or explosion when exposed to extreme heat.

SECTION 6 — ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

Remove all sources of ignition. Ventilate the area.

Remove with inert absorbent.

SECTION 7 — HANDLING AND STORAGE

STORAGE CATEGORY

DOL Storage Class II

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE

Contents are COMBUSTIBLE. Keep away from heat and open flame.

Consult NFPA Code. Use approved Bonding and Grounding procedures.

Keep container closed when not in use. Transfer only to approved containers with complete and appropriate labeling. Do not take internally. Keep out of the reach of children.

To minimize the possibility of spontaneous combustion: control the accumulation of overspray; soak wiping rags and waste immediately after use in a water-filled, closed metal container; air dry filters outside, far from any combustible material and separated by bricks or other non-combustible spacers; dispose of all contaminated materials and waste properly. Consult OSHA 29 CFR 1910.107(b)(5) and NFPA 33, Chapter 8 (8-9) for the proper procedures.

SECTION 8 — EXPOSURE CONTROLS/PERSONAL PROTECTION

PRECAUTIONS TO BE TAKEN IN USE

Use only with adequate ventilation.

Avoid contact with skin and eyes. Avoid breathing vapor and spray mist.

Wash hands after using.

This coating may contain materials classified as nuisance particulates (listed "as Dust" in Section 2) which may be present at hazardous levels only during sanding or abrading of the dried film. If no specific dusts are listed in Section 2, the applicable limits for nuisance dusts are ACGIH TLV 10 mg/m3 (total dust), 3 mg/m3 (respirable fraction), OSHA PEL 15 mg/m3 (total dust), 5 mg/m3 (respirable fraction).

VENTILATION

Local exhaust preferable. General exhaust acceptable if the exposure to materials in Section 2 is maintained below applicable exposure limits. Refer to OSHA Standards 1910.94, 1910.107, 1910.108.

RESPIRATORY PROTECTION

If personal exposure cannot be controlled below applicable limits by ventilation, wear a properly fitted organic vapor/particulate respirator approved by NIOSH/MSHA for protection against materials in Section 2.

When sanding or abrading the dried film, wear a dust/mist respirator approved by NIOSH/MSHA for dust which may be generated from this product, underlying paint, or the abrasive.

PROTECTIVE GLOVES

Wear gloves which are recommended by glove supplier for protection against materials in Section 2.

EYE PROTECTION

Wear safety spectacles with unperforated sideshields.

OTHER PRECAUTIONS

Intentional misuse by deliberately concentrating and inhaling the contents can be harmful or fatal.

SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

PRODUCT WEIGHT	7.24 lb/gal	867 g/l
SPECIFIC GRAVITY	0.87	
BOILING POINT	300 - 395 °F	148 - 201 °C
MELTING POINT	Not Available	
VOLATILE VOLUME	63%	
EVAPORATION RATE	Slower than ether	
VAPOR DENSITY	Heavier than air	
SOLUBILITY IN WATER	N.A.	

VOLATILE ORGANIC COMPOUNDS (VOC Theoretical - As Packaged)

4.09 lb/gal	490 g/l	Less Water and Federally Exempt Solvents
4.09 lb/gal	490 g/l	Emitted VOC

SECTION 10 — STABILITY AND REACTIVITY

STABILITY — Stable
CONDITIONS TO AVOID
None known.
INCOMPATIBILITY
None known.
HAZARDOUS DECOMPOSITION PRODUCTS
By fire: Carbon Dioxide, Carbon Monoxide
HAZARDOUS POLYMERIZATION
Will not occur

SECTION 11 — TOXICOLOGICAL INFORMATION

CHRONIC HEALTH HAZARDS
No ingredient in this product is an IARC, NTP or OSHA listed carcinogen.
Reports have associated repeated and prolonged overexposure to solvents with permanent brain and nervous system damage.
TOXICOLOGY DATA

CAS No.	Ingredient Name			
64742-88-7	Mineral Spirits			
		LC50 RAT	4HR	Not Available
		LD50 RAT		Not Available

SECTION 12 — ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION
No data available.

SECTION 13 — DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD
Waste from this product may be hazardous as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261.
Waste must be tested for ignitability to determine the applicable EPA hazardous waste numbers.
Incinerate in approved facility. Do not incinerate closed container. Dispose of in accordance with Federal, State/Provincial, and Local regulations regarding pollution.

SECTION 14 — TRANSPORT INFORMATION

Multi-modal shipping descriptions are provided for informational purposes and do not consider container sizes. The presence of a shipping description for a particular mode of transport (ocean, air, etc.), does not indicate that the product is packaged suitably for that mode of transport. All packaging must be reviewed for suitability prior to shipment, and compliance with the applicable regulations is the sole responsibility of the person offering the product for transport.

US Ground (DOT)
May be Classed as a Combustible Liquid for U.S. Ground.
UN1263, PAINT, 3, PG III, (ERG#128)
Bulk Containers may be Shipped as:
UN1263, PAINT, COMBUSTIBLE LIQUID, PG III, (ERG#128)
Canada (TDG)
May be Classed as a Combustible Liquid for Canadian Ground.
UN1263, PAINT, CLASS 3, PG III, (ERG#128)
IMO
5 Liters (1.3 Gallons) and Less may be Shipped as Limited Quantity.
UN1263, PAINT, CLASS 3, PG III, (39 C c.c.), EmS F-E, S-E, ADR (D/E)
IATA/ICAO
UN1263, PAINT, 3, PG III

SECTION 15 — REGULATORY INFORMATION

SARA 313 *(40 CFR 372.65C)* SUPPLIER NOTIFICATION

CAS No.	CHEMICAL/COMPOUND	% by WT	% Element

No ingredients in this product are subject to SARA 313 (40 CFR 372.65C) Supplier Notification.
CALIFORNIA PROPOSITION 65
WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

TSCA CERTIFICATION

All chemicals in this product are listed, or are exempt from listing, on the TSCA Inventory.

SECTION 16 — OTHER INFORMATION

This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

The above information pertains to this product as currently formulated, and is based on the information available at this time. Addition of reducers or other additives to this product may substantially alter the composition and hazards of the product. Since conditions of use are outside our control, we make no warranties, express or implied, and assume no liability in connection with any use of this information.

MATERIAL SAFETY DATA SHEET

Penetone® Corporation, 700 Gotham Parkway, Carlstadt, NJ 07072

PENSOLV™ L805

Date Prepared: July 2, 2007
MSDS No.: 4765-707A

SECTION 1 PRODUCT IDENTIFICATION & EMERGENCY INFORMATION

PRODUCT NAME: PENSOLV L805
GENERAL USE: Degreaser
PRODUCT DESCRIPTION: Solvent/solvent blend
GENERIC INGREDIENTS: Aliphatic hydrocarbons, d'limonene

EMERGENCY TELEPHONE NUMBERS: PENETONE 201-567-3000
CHEMTREC 800-424-9300

SECTION 2 HAZARDOUS INGREDIENT SECTION

This product is hazardous as defined in 29 CFR1910.1200.

OSHA HAZARD: COMBUSTIBLE

OSHA HAZARDOUS INGREDIENTS

		EXPOSURE LIMITS 8 hrs. TWA (ppm)		
	CAS#	OSHA PEL	ACGIH TLV	Supplier
Aliphatic hydrocarbons	64742-88-7	not established	not established	100
D'limonene	5989-27-5	not established	not established	---

SECTION 3 HEALTH INFORMATION & PROTECTION

EMERGENCY OVERVIEW:

Clear water white liquid with citrus odor.
Combustible. Can be irritating to eyes, skin, and respiratory tract.

POTENTIAL HEALTH EFFECTS:

EYE CONTACT:

Slightly irritating but does not injure eye tissue.

SKIN CONTACT:

Frequent or prolonged contact may irritate or dry the skin or cause dermatitis. Skin contact may aggravate an existing dermatitis condition.

INHALATION:

High vapor/aerosol concentrations (greater than the TLV) are irritating to the respiratory tract, may cause headaches, dizziness, anesthesia, drowsiness, unconsciousness, and other central nervous system effects.

INGESTION:

Small amounts of this liquid may be drawn into the lungs by either swallowing or vomiting. This may cause severe and delayed health effects such as inflammation of the lungs and infection of the bronchi. Ingestion may cause irritation of the digestive tract and diarrhea.

CHRONIC:

Ingestion of large amounts of d'limonene has caused kidney and liver damage in male rats but not in female rats or mice of both species.

FIRST AID MEASURES:

EYE CONTACT:

Flush eyes with large amounts of water. See physician immediately.

SKIN CONTACT:

Flush skin with large amounts of water. Use soap if available. Remove contaminated clothing and launder before reuse. If skin irritation develops or persists, consult physician.

INHALATION:

Remove person to fresh air. Administer oxygen or artificial respiration as needed. Call a physician immediately.

INGESTION:

If swallowed, DO NOT INDUCE VOMITING. Use a stomach pump. Call a physician immediately.

WORKPLACE EXPOSURE CONTROLS:

PERSONAL PROTECTION:

Safety glasses are recommended for all workplace conditions. Solvent resistant gloves are recommended where prolonged skin exposure is expected. Other protective gear, including splash proof goggles or face shield, rubber boots, aprons, gauntlets, or rain gear should be worn depending on how the product is used.

VENTILATION:

None needed under normal use conditions. For enclosed areas, or where large amounts of the product are being used, the use of fans or other mechanical ventilation is recommended. An organic vapor mask should be used if the TLV is exceeded and a particle mask if the product is sprayed. DO NOT MIST THIS PRODUCT. Use coarse spray only.

SECTION 4 FIRE & EXPLOSION HAZARDS

FLASH POINT: 105°F TCC
FLAMMABLE LIMITS: about 1% LEL, about 7.0% UEL
AUTOIGNITION TEMPERATURE: not available

GENERAL HAZARD:

Combustible liquid. Can form combustible mixtures at or above the flash point.
Containers can rupture and explode under fire conditions due to pressure and vapor buildup.

FIRE FIGHTING:

Either allow fire to burn out under controlled conditions or extinguish with water, foam, or dry chemical.
Cool exposed containers with water spray.

HAZARDOUS COMBUSTION PRODUCTS:

Smoke, fumes, and oxides of carbon.

SECTION 5 SPILL CONTROL MEASURES

LAND SPILL:

Eliminate sources of ignition. For small spills, use absorbent material such as towels or absorbent powders. Put all material into proper waste disposal container with lid tightly covered. **Solvent soaked materials may spontaneously combust.** For larger spills, dike spill, recover free liquid, and use absorbent material to dry area. Put all material into appropriate waste containers.

WATER SPILL:

Remove product from water surface by skimming or with suitable absorbents. If allowed by local environmental regulatory agencies, you may use a suitable dispersant. Check with local environmental regulatory agencies for reporting requirements.

SECTION 6 HANDLING & STORAGE

STORAGE TEMPERATURE, °F: ambient. DO NOT STORE ABOVE 120 Deg. F.

GENERAL: Keep away from heat sources, open flames, and other ignition sources. Do not store near strong oxidants.

SECTION 7 TYPICAL PHYSICAL & CHEMICAL PROPERTIES

BOILING POINT, °F:
initial 315

EVAPORATION RATE, n-butyl acetate = 1:
0.1

SOLUBILITY IN WATER:
insoluble

SPECIFIC GRAVITY at 75°F:
0.78

ODOR AND APPEARANCE:
clear water-white liquid, citrus odor

VAPOR PRESSURE, mm Hg at 20°C:
less than 5

VAPOR DENSITY (Air = 1):
about 4

WT% ORGANIC VOLATILES:
100

pH:
not applicable

SECTION 8 REACTIVITY DATA

GENERAL:
This product is stable and hazardous polymerization will not occur.

INCOMPATIBLE MATERIALS AND CONDITIONS TO AVOID:
Strong oxidizing agents.

SECTION 9 REGULATORY INFORMATION

DEPARTMENT OF TRANSPORTATION (DOT):

PROPER SHIPPING NAME:
FLAMMABLE LIQUID, N.O.S.
(contains petroleum distillates)

HAZARD CLASS: 3

IDENTIFICATION NUMBER: UN 1993 **PACKING GROUP:** III

LABEL: FLAMMABLE

FLASH POINT: 105°F **pH:** not applicable

TSCA: The ingredients in this product are listed on the TSCA inventory.

CERCLA:
This product contains no reportable CERCLA materials. Contact local authorities to determine if there may be other local reporting requirements.

RCRA HAZARD CLASS:
D001 Ignitable hazardous waste

SARA TITLE III:

311/312 HAZARD CATEGORIES:

Acute health, Fire

313 REPORTABLE INGREDIENTS:

None

NEW JERSEY RIGHT-TO-KNOW INFORMATION:

This product contains aliphatic hydrocarbons (CAS# 64742-88-7) and d'limonene (CAS# 5989-27-5).

CALIFORNIA PROPOSITION 65 INFORMATION:

This product does not contain any chemicals recognized by the state of California to cause cancer and/or birth defects or reproductive harm.

SCAQMD INFORMATION:

Is there a photochemically reactive material present? Yes
What is the % by volume of photochemically reactive material? about 15
What is the VOC content? 780 g/L
What is the vapor pressure of VOC's? less than 5 mm Hg

SECTION 10 NOTES

HAZARD RATING SYSTEMS:

	HMIS	NFPA
HEALTH	1	1
FLAMMABILITY	2	2
REACTIVITY	0	0

KEY
4 = Severe
3 = Serious
2 = Moderate
1 = Slight
0 = Minimal

REVISION SUMMARY:

Change in Section 9

SUPERSEDES ISSUE DATE:

February 26, 2004

FOR ADDITIONAL PRODUCT INFORMATION, CONTACT YOUR SALES ENGINEER
FOR ADDITIONAL HEALTH/SAFETY INFORMATION, CALL 201-567-3000

Oakite® 61 B

An Inhibited alkaline tank immersion cleaner for aluminum and aluminum alloys approved under Boeing Specification BAC 5749.

PRIMARY APPLICATION

Oakite 61 B is an inhibited, alkaline tank immersion cleaner for aluminum and aluminum alloy castings, forgings and sheet. It is especially designed to remove stenciled identification inks (even baked-on inks), oils and shop soils with no attack on the base metal. After rinsing, it provides a chemically clean, water-break free surface. The material is free-rinsing and may be air-agitated if desired.

Oakite 61 B may also be used for soak tank cleaning of aluminum cake pans, meat molds and freezer pans in food plants. It contains ingredients acceptable to the FDA and is authorized by the USDA for use in federally inspected meat and poultry plants.

CHEMICAL CHARACTERISTICS

chemical composition	surfactants and alkaline salts, including silicates
physical form	as received: white granular powder as used: colorless solution
odor	none
bulk density	7.5 lb/gal at 68°F
viscosity	not applicable
flash point	none
hygroscopic tendency	moderate
foaming tendency	moderate
recommended diluents	water
maximum solubility	37.5 g/ℓ at 21°C (5 oz/gal at 70°F)
behavior in hard water	sequesters
rinsability	good
biodegradable surfactants	yes
phosphate-free	no
normal working temperatures	71° to 88°C (160° to 190°F)
normal working concentrations	22.5 to 60 g/ℓ (3 to 8 oz/gal)
pH at working concentrations	12.4 to 12.8
effect of prolonged boiling	none

effect of working solutions on metals.....rate of metal loss from 6-hour static immersion in Oakite 61 B, 30 g/ℓ (4 oz/gal) at 88°C (190°F), projected for one year, is as follows:

metal (alloy)	mm/yr	in/yr
aluminum (1100, 2024)	0.00	0.000
steel	0.00	0.000
stainless steel	0.00	0.000
brass	0.46	0.018
copper	0.43	0.017
magnesium	0.00	0.000
zinc	1.98	0.078

APPLICATION PROCEDURE

For Removing Stencil Inks, Oils, Light Films, Shop Soils
Use 61 B at 22.5 to 60 g/ℓ (3 to 8 oz/gal) of cold water (depending upon the soils). Heat to between 71°C and 88°C (160° to 190°F) and immerse parts for 5 to 10 minutes. Air agitation may be used to improve cleaning. Follow this stage with a rinse.
For Removing Food Residues from Meat Molds, Cake and Fryer Pans
Apply 61 B at 30 to 60 g/ℓ (4 to 8 oz/gal) of water (depending upon the soils) and heat to 88°C (190°F). Immerse as necessary to assure thorough soil removal. Rinse. (Air agitation is helpful.)

Solution Control:
Concentrations are titrated using Gardotest Procedure 122.
Sample Size: 2.0 mls Factor: 6.0

For free and total alkali, use Gardotest Procedure 123. (See Procedure)

EQUIPMENT

Chemical Dispensing: The Chemetall Oakite Slurry Feed System can be used to premix powdered products with water allowing them to become slurries. The slurries can then be fed into the process automatically with a process controller and/or the proper chemical feed pump. The system includes a slurry tank, tank stand, mixer and chemical feed pump. Please contact the Chemetall Oakite Process Equipment and Engineering Department for specific recommendations.

NOTES ON USE (See Material Safety Data Sheet)

Safety and Handling Precautions: Oakite 61 B is a moderately alkaline industrial product containing biodegradable surfactants. May cause burns to eyes. Causes skin irritation. Harmful if swallowed. Avoid contact with eyes, skin and clothing. Wear rubber gloves, safety goggles or face shield, and suitable protective clothing when handling dry powder or solutions. Wash thoroughly after using. Do not take internally.

First Aid in Case of Contact: Flush skin or eyes with plenty of water for at least 15 minutes. For **eyes,** get medical attention. If **swallowed**, give several glasses of water or milk to drink followed by dilute vinegar, lemon juice or other citrus fruit juice. Contact a physician.

KEEP OUT OF REACH OF CHILDREN

DISPOSAL (See Material Safety Data Sheet)

Dispose of according to all federal, state and local regulations.

PACKAGING

Packaged in nonreturnable fiber drums with poly bags as follows:

large drum: 400 lb/385 lb net
small drum: 170 lb/162 lb net

SHIPMENT

May be shipped by any common carrier. Freight classification is "Cleaning Compound, NOI, Powder". Product Code: 0612.

STORAGE

Suitable for general indoor storage. Keep container closed when not in use.

effect of high temperature storage ..... some caking
effect of low temperature storage ..... none
effect of aging ..... some caking

Chemetall Oakite

ISO 9001:2000
FM 93653

Corporate Headquarters and Eastern Branch (800) 526-4473 • **Central Branch (Midwest)** (877) 941-3800
Western Branch (800) 331-1197 • **Oakite Canada Limited** (800) 668-4318
Chemetall Mexicana 011 52 55 5656 1490 • **Chemetall do Brasil Ltda.** (5511) 4066 8800
Website: www.oakite.com • E-mail: oakite.products@chemetall.com • **Shop online at www.oakitestore.com**

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MATERIAL SAFETY DATA SHEET

Sales Order: {SalesOrd}

S4007 ZINC CHROMATE PRIMER (AEROSOL) TT-P-1757A

MSDS Revision No:
MSDS Revision Date: 11/23/2004

Akzo Nobel Coatings
Awlgrip North America
2270 Morris Avenue
P. O. Box 386
Union, NJ 07083

EMERGENCY NUMBERS:

(800) 424-9300 CHEMTREC (USA)
(703) 527-3887 CHEMTREC (Intl)
(800) 854-6813 Poison Control Center

CUSTOMER SERVICE: (Non-Emergency)
(888) 355-3090 AWLGRIP (Phone)
(908) 686-1752 AWLGRIP (Fax)

1. GENERAL INFORMATION

Product Identity: S4007 ZINC CHROMATE PRIMER (AEROSOL) TT-P-1757A

Bulk Sales Reference No: OS4007

IMPORTANT: Read this MSDS before handling or disposing of this product, and provide this information to the employee, customers, and users of this product. PLEASE NOTE THE MSDS REVISION NUMBER AT THE TOP OF THIS PAGE. If the MSDS Revision Number posted at the top of this page does not match the MSDS Revision Number on the product label, please contact Customer Service at the phone number included above for the correct MSDS. This product is covered by the OSHA Hazard Communication Standard and this document has been prepared in accordance with requirements of this standard.
NOTICE: OSHA hazardous chemicals are listed in Section 2 if present at 1% or more. Carcinogens and extraordinarily/special hazardous chemicals are listed in Section 2 if present at .1% or more. Additional regulatory information for specific chemical categories is included in Section 15.

2. HAZARDOUS INGREDIENT INFORMATION

CAS No.	Ingredient Name & %	Source	Exposure Data
		OSHA:	1000 ppm TWA; 2400 mg/m3 TWA1000 ppm STEL; 2400 mg/m3 STEL (The acetone STEL does not apply to the cellulose acetate fiber
		ACGIH:	500 ppm TWA750 ppm STEL

000067-64-1	Acetone 25 - 50% by Weight	NIOSH:	250 ppm TWA; 590 mg/m3 TWA2500 ppm IDLH
		Supplier:	No Data Available
		OHSA, CAN:	500 ppm TWAEV750 ppm STEV
		Mexico:	1000 ppm TWA; 2400 mg/m3 TWA1260 ppm STEL; 3000 mg/m3 STEL
		Brazil:	780 ppm TWA; 1870 mg/m3 TWA
		Source	**Health Data**
		NIOSH:	Narcosis; CNS depression; eye nose
		Source	**Carcinogen Data**
		OSHA:	Select Carcinogen: No
		NTP:	Known Carcinogen: No; Suspected Carcinogen: No
		IARC:	Group 1: No; Group 2A: No; Group 2b: No; Group 3: No; Group 4: No

CAS No.	Ingredient Name & %	Source	Exposure Data
000074-98-6	Propane 10 - 25% by Weight	OSHA:	1000 ppm TWA; 1800 mg/m3 TWA
		ACGIH:	2500 ppm TWA
		NIOSH:	1000 ppm TWA; 1800 mg/m3 TWA2100 ppm IDLH
		Supplier:	No Data Available
		OHSA, CAN:	2500 ppm TWAEV
		Mexico:	No Data Available
		Brazil:	No Data Available
		Source	**Health Data**
		NIOSH:	Asphyxiation
		Source	**Carcinogen Data**
		OSHA:	Select Carcinogen: No
		NTP:	Known Carcinogen: No; Suspected Carcinogen: No
		IARC:	Group 1: No; Group 2A: No; Group 2b: No; Group 3: No; Group 4: No

CAS No.	Ingredient Name & %	Source	Exposure Data
		OSHA:	100 ppm TWA; 300 mg/m3 TWA
		ACGIH:	50 ppm TWA
		NIOSH:	50 ppm TWA; 150 mg/m3 TWA1600 ppm IDLH

000078-83-1	Isobutyl alcohol 1.0 - 10% by Weight	Supplier:	No Data Available
		OHSA, CAN:	50 ppm TWAEV; 150 mg/m3 TWAEV
		Mexico:	50 ppm TWA; 150 mg/m3 TWA75 ppm STEL; 225 mg/m3 STEL
		Brazil:	40 ppm TWA; 115 mg/m3 TWA
		Source	**Health Data**
		NIOSH:	Narcotic effects; mild irritation of the skin eyes
		Source	**Carcinogen Data**
		OSHA:	Select Carcinogen: No
		NTP:	Known Carcinogen: No; Suspected Carcinogen: No
		IARC:	Group 1: No; Group 2A: No; Group 2b: No; Group 3: No; Group 4: No

CAS No.	Ingredient Name & %	Source	Exposure Data
000107-98-2	Propylene glycol monomethyl ether 1.0 - 10% by Weight	OSHA:	150 ppm STEL; 540 mg/m3 STEL
		ACGIH:	100 ppm TWA150 ppm STEL
		NIOSH:	100 ppm TWA; 360 mg/m3 TWA150 ppm STEL; 540 mg/m3 STEL
		Supplier:	No Data Available
		OHSA, CAN:	100 ppm TWAEV; 365 mg/m3 TWAEV150 ppm STEV; 550 mg/m3 STEV
		Mexico:	No Data Available
		Brazil:	No Data Available
		Source	**Health Data**
		NIOSH:	Eye nose
		Source	**Carcinogen Data**
		OSHA:	Select Carcinogen: No
		NTP:	Known Carcinogen: No; Suspected Carcinogen: No
		IARC:	Group 1: No; Group 2A: No; Group 2b: No; Group 3: No; Group 4: No

CAS No.	Ingredient Name & %	Source	Exposure Data
		OSHA:	100 ppm TWA; 410 mg/m3 TWA75 ppm STEL; 300 mg/m3 STEL
		ACGIH:	50 ppm TWA75 ppm STEL
		NIOSH:	50 ppm TWA; 205 mg/m3 TWA75 ppm STEL; 300 mg/m3 STEL500 ppm IDLH

000108-10-1	Methylisobutyl ketone 10 - 25% by Weight	Supplier:	No Data Available
		OHSA, CAN:	50 ppm TWAEV; 205 mg/m3 TWAEV75 ppm STEV; 305 mg/m3 STEV
		Mexico:	50 ppm TWA; 203 mg/m3 TWA75 ppm STEL; 307 mg/m3 STEL
		Brazil:	No Data Available
		Source	**Health Data**
		NIOSH:	Irritation liver
		Source	**Carcinogen Data**
		OSHA:	Select Carcinogen: No
		NTP:	Known Carcinogen: No; Suspected Carcinogen: No
		IARC:	Group 1: No; Group 2A: No; Group 2b: No; Group 3: No; Group 4: No

CAS No.	Ingredient Name & %	Source	Exposure Data
000110-19-0	Isobutyl acetate 1.0 - 10% by Weight	OSHA:	150 ppm TWA; 700 mg/m3 TWA
		ACGIH:	150 ppm TWA
		NIOSH:	150 ppm TWA; 700 mg/m3 TWA1300 ppm IDLH
		Supplier:	No Data Available
		OHSA, CAN:	150 ppm TWAEV; 710 mg/m3 TWAEV187 ppm STEV; 887 mg/m3 STEV
		Mexico:	150 ppm TWA; 700 mg/m3 TWA187 ppm STEL; 875 mg/m3 STEL
		Brazil:	No Data Available
		Source	**Health Data**
		NIOSH:	Eye and nose irritation narcosis
		Source	**Carcinogen Data**
		OSHA:	Select Carcinogen: No
		NTP:	Known Carcinogen: No; Suspected Carcinogen: No
		IARC:	Group 1: No; Group 2A: No; Group 2b: No; Group 3: No; Group 4: No

CAS No.	Ingredient Name & %	Source	Exposure Data
		OSHA:	No Data Available
		ACGIH:	No Data Available
		NIOSH:	No Data Available

000115-10-6	Dimethyl ether 10 - 25% by Weight	Supplier:	No Data Available
		OHSA, CAN:	No Data Available
		Mexico:	No Data Available
		Brazil:	No Data Available
		Source	**Health Data**
		NIOSH:	No Data Available
		Source	**Carcinogen Data**
		OSHA:	Select Carcinogen: No
		NTP:	Known Carcinogen: No; Suspected Carcinogen: No
		IARC:	Group 1: No; Group 2A: No; Group 2b: No; Group 3: No; Group 4: No

CAS No.	Ingredient Name & %	Source	Exposure Data
000142-82-5	Heptane (n-) 1.0 - 10% by Weight	OSHA:	500 ppm TWA; 2000 mg/m3 TWA500 ppm STEL; 2000 mg/m3 STEL
		ACGIH:	400 ppm TWA500 ppm STEL
		NIOSH:	85 ppm TWA; 350 mg/m3 TWA440 ppm Ceiling (15 minute); 1800 mg/m3 Ceiling (15 minute)750 ppm IDLH
		Supplier:	No Data Available
		OHSA, CAN:	400 ppm TWAEV; 1635 mg/m3 TWAEV500 ppm STEV; 2045 mg/m3 STEV
		Mexico:	400 ppm TWA; 1600 mg/m3 TWA500 ppm STEL; 2000 mg/m3 STEL
		Brazil:	No Data Available
		Source	**Health Data**
		NIOSH:	Skin and nervous system effects (Listed under 'Alkanes (C5-C8)')
		Source	**Carcinogen Data**
		OSHA:	Select Carcinogen: No
		NTP:	Known Carcinogen: No; Suspected Carcinogen: No
		IARC:	Group 1: No; Group 2A: No; Group 2b: No; Group 3: No; Group 4: No

CAS No.	Ingredient Name & %	Source	Exposure Data
		OSHA:	1 mg/m3 TWA
		ACGIH:	0.5 mg/m3 TWA
		NIOSH:	0.5 mg/m3 TWA250 mg/m3 IDLH

007440-47-3	Chromium 1.0 - 10% by Weight	Supplier:	No Data Available
		OHSA, CAN:	0.5 mg/m3 TWAEV
		Mexico:	0.5 mg/m3 TWA
		Brazil:	No Data Available
		Source	**Health Data**
		NIOSH:	Pulmonary effects
		Source	**Carcinogen Data**
		OSHA:	Select Carcinogen: No
		NTP:	Known Carcinogen: No; Suspected Carcinogen: No
		IARC:	Group 1: No; Group 2A: No; Group 2b: No; Group 3: Yes; Group 4: No

CAS No.	Ingredient Name & %	Source	Exposure Data
007440-66-6	Zinc 1.0 - 10% by Weight	OSHA:	No Data Available
		ACGIH:	No Data Available
		NIOSH:	No Data Available
		Supplier:	No Data Available
		OHSA, CAN:	No Data Available
		Mexico:	No Data Available
		Brazil:	No Data Available
		Source	**Health Data**
		NIOSH:	No Data Available
		Source	**Carcinogen Data**
		OSHA:	Select Carcinogen: No
		NTP:	Known Carcinogen: No; Suspected Carcinogen: No
		IARC:	Group 1: No; Group 2A: No; Group 2b: No; Group 3: No; Group 4: No

CAS No.	Ingredient Name & %	Source	Exposure Data
		OSHA:	No Data Available
		ACGIH:	No Data Available
		NIOSH:	No Data Available
		Supplier:	No Data Available

064742-88-7	Solvent naphtha (petroleum), medium aliphatic 1.0 - 10% by Weight	OHSA, CAN:	No Data Available
		Mexico:	No Data Available
		Brazil:	No Data Available
		Source	**Health Data**
		NIOSH:	No Data Available
		Source	**Carcinogen Data**
		OSHA:	Select Carcinogen: No
		NTP:	Known Carcinogen: No; Suspected Carcinogen: No
		IARC:	Group 1: No; Group 2A: No; Group 2b: No; Group 3: No; Group 4: No

CAS No.	Ingredient Name & %	Source	Exposure Data
064742-89-8	Solvent naphtha (petroleum), light aliphatic 1.0 - 10% by Weight	OSHA:	No Data Available
		ACGIH:	No Data Available
		NIOSH:	No Data Available
		Supplier:	No Data Available
		OHSA, CAN:	No Data Available
		Mexico:	No Data Available
		Brazil:	No Data Available
		Source	**Health Data**
		NIOSH:	No Data Available
		Source	**Carcinogen Data**
		OSHA:	Select Carcinogen: No
		NTP:	Known Carcinogen: No; Suspected Carcinogen: No
		IARC:	Group 1: No; Group 2A: No; Group 2b: No; Group 3: No; Group 4: No

3. HAZARD IDENTIFICATION

Overview:	Avoid contact with eyes, skin and clothing.
Inhalation:	Harmful if inhaled. Causes nose and throat irritation.
Eyes:	Causes severe eye irritation. Do not get in eyes.

Skin:	Causes skin irritation. May be harmful if absorbed through the skin.
Ingestion:	Harmful if swallowed. May cause abdominal pain, nausea, vomiting, diarrhea, or drowsiness.
Chronic Effects:	Contains an ingredient which can cause organ damage (See Section 2 and Section 15 for each ingredient). Birth defect hazard. Contains an ingredient which can cause birth defects (See Section 2 and Section 15 for each ingredient). Cancer hazard. Contains an ingredient which can cause cancer (See Section 2 and Section 15 for each ingredient). Risk of cancer depends on duration and level of exposure.
HMIS Rating:	Health: Unknown Flammability: Unknown Reactivity: Unknown

4. FIRST AID MEASURES

General:	Remove contaminated clothing and shoes. Get medical attention immediately. Wash clothing before reuse. Thoroughly clean or destroy contaminated shoes.
Inhalation:	If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.
Eyes:	In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention immediately.
Skin:	In case of contact, immediately flush skin with soap and plenty of water. Get medical attention immediately.
Ingestion:	If swallowed, immediately contact Poison Control Center at 1-800-854-6813. DO NOT induce vomiting unless instructed to do so by medical personnel. Never give anything by mouth to an unconscious person.

5. PROTECTIVE EQUIPMENT AND CONTROL MEASURES

Respiratory:	Select equipment to provide protection from the ingredients listed in Section 2 of this document. Ensure fresh air entry during application and drying. If you experience eye watering, headache or dizziness or if air monitoring demonstrates dust, vapor, or mist levels are above applicable limits, wear an appropriate, properly fitted respirator (NIOSH approved) during and after application. Follow respirator manufacturer's directions for respirator use. FOR USERS OF 3M RESPIRATORY PROTECTION ONLY: For information and assistance on 3M occupational health and safety products, call OH&ESD Technical Service toll free in U.S.A. 1-800-243-4630, in Canada call 1-800-267-4414. Please do not contact these numbers regarding other manufacturer's respiratory protection products. 3M does not endorse the accuracy of the information contained in this Material Safety Data Sheet.
Eyes:	Do not get in eyes. Protective equipment should be selected to provide protection from exposure to the chemicals listed in Section 2 of this document. Depending on the site-specific conditions of use, safety glasses, chemical goggles, and/or head and face protection may be required to prevent contact. The equipment must be thoroughly cleaned, or discarded after each use.
Skin/Hand:	Protective equipment should be selected to provide protection from exposure to the chemicals listed in Section 2 of this document. Depending on the site-specific conditions of use, protective gloves, apron, boots, head and face protection may be required to prevent contact. The equipment must be thoroughly cleaned, or discarded after each use.
Engineering Controls:	Depending on the site-specific conditions of use, provide adequate ventilation.

Other Work Practices:	Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Use good personal hygiene practices. Wash hands before eating, drinking, using toilet facilities, etc. Promptly remove soiled clothing and wash clothing thoroughly before reuse. Shower after work using plenty of soap and water.

6. FIRE AND EXPLOSION INFORMATION

Flash Point:	F: 0 C: -18
Lower Explosive Limit (LEL):	0.9 (%vol in air) at Normal Atmospheric Temp and Pressure
Fire and Explosion Hazards:	Extremely flammable liquid and vapor. Vapors may cause flash fire. FLAMMABLE/ COMBUSTIBLE MATERIALS: Will be easily ignited by heat, sparks or flames. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back. Most vapors are heavier than air. They will spread along ground and collect in low or confined areas (sewers, basements, tanks) creating a vapor explosion hazard. Runoff to sewers may create fire or explosion hazard. Containers may explode when heated.
Fire Fighting Procedures:	CAUTION: This product has a very low flashpoint. Use of water spray when fighting fire may be inefficient. SMALL FIRES: Use dry chemical, CO2, water spray or alcohol-resistant foam. LARGE FIRES: Use water spray, fog, or alcohol-resistant foam. Do not use straight streams. Move containers from fire area if you can do so without risk. Runoff from fire control may cause pollution. Dike fire control water for later disposal. Do not scatter the material. **Also Reference Emergency Response Guide Number:** 127

7. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	No Information Provided
pH:	?
Specific Gravity:	0.785
Boiling Point (F):	10.6 ERROR!!!
Vapor Density:	Heavier than air
VOC Content (lbs):	Refer to the Technical Data Sheet for this product.
Evaporation Rate:	Slower than ether

8. STABILITY AND REACTIVITY DATA

General:	This product is stable and hazardous polymerization will not occur.
Incompatible Materials:	Strong oxidizing agents.
Hazardous Decompostion:	May produce hazardous fumes when heated to decomposition as in welding. Fumes may produce Carbon Dioxide and Carbon Monoxide.

9. HANDLING AND STORAGE

Storage Temperature:	Store between 32 and 120 F
Handling and Storage Precautions:	Keep away from heat, sparks and flame. Do not smoke. Extinguish all flames and pilot lights, and turn off stoves, heaters, electric motors and other sources of ignition during use and until all vapors are gone. Vapors may cause flash fire or ignite explosively. Do not get in eyes, on skin or clothing. Close container after each use. Wash thoroughly after handling.

10. TOXICOLOGICAL DATA

General:	No additional information provided for this product. See Section 2 for chemical specific data.

11. ECOLOGICAL DATA

General:	No additional information provided for this product. See Section 2 for chemical specific data.

12. ACCIDENTAL RELEASE MEASURES

Spill Response Procedures:	ELIMINATE ALL IGNITION SOURCES (no smoking, flares, sparks or flames in immediate area). Use only non-sparking equipment to handle spilled material and absorbent. Do not touch or walk through spilled material. Stop leak if you can do so without risk. Prevent entry into waterways, sewers, basements or confined areas. A vapor suppressing foam may be used to reduce vapors. Absorb or cover with dry earth, sand, or other non-combustible material and transfer to containers. Use non-sparking tools to collect absorbed material.
Public Safety:	CALL CHEMTREC at (800)-424-9300 for emergency response. Isolate spill or leak area immediately for at least 25 to 50 meters (80 to 160 feet) in all directions. Keep unauthorized personnel away. Stay upwind. Keep out of low areas. Ventilate closed spaces before entering. LARGE SPILLS: Consider initial downwind evacuation for at least 300 meters (1000 feet). **Also, Reference Emergency Response Guide Number: 127**

13. DISPOSAL CONSIDERATION

Waste Disposal:	Dispose of in accordance with local, state and federal regulations. (Also reference RCRA information in Section 15 if listed).

14. TRANSPORTATION INFORMATION

DOT (Domestic Surface Transportation)		IMO / IMDG (Ocean Transportation)	
DOT Proper Shipping Name:		**IMDG Proper Shipping Name:**	
PAINT		PAINT	
DOT Hazard Class:	3	**IMDG Hazard Class:**	3.2 - Intermediate flashpoint flammable liquids
UN / NA Number:	UN 1263	**UN Number:**	UN 1263
DOT Packing Group:	II	**IMDG Packing Group:**	II
CERCLA/DOT RQ:	3059 gal. / 20000 lbs.	**System Reference Code:**	38

15. REGULATORY INFORMATION

Regulatory Overview:	The regulatory data in Section 15 is not intended to be all-inclusive, only selected regulations are represented. All ingredients of this product are listed on the TSCA (Toxic Substance Control Act) Inventory or are not required to be listed on the TSCA Inventory. **Note:** Any chemical ingredients listed in Section 15, that do not also appear in Section 2, are contained in the product at a concentration below the applicable OSHA threshold level of 1% or 0.1%.
WHMIS Classification:	Not Determined
Regulatory List	**Product Ingredients on List**
DOT Marine Pollutants (10%):	
(No Product Ingredients Listed)	
DOT Severe Marine Pollutants (1%):	
(No Product Ingredients Listed)	

EPCRA 311/312 Chemicals and RQs (>.1%) :

000067-64-1	Acetone : 5000 lb final RQ; 2270 kg final RQ
007440-47-3	Chromium : 5000 lb final RQ (no reporting of releases of this hazardous substance is required if the diame
000110-19-0	Isobutyl acetate : 5000 lb final RQ (Listed under Butyl acetate); 2270 kg final RQ (Listed under Butyl acetate)
000078-83-1	Isobutyl alcohol : 5000 lb final RQ; 2270 kg final RQ
000108-10-1	Methylisobutyl ketone : 5000 lb final RQ; 2270 kg final RQ
007440-66-6	Zinc : 1000 lb final RQ (no reporting of releases of this hazardous substance is required if the diame

EPCRA 302 Extremely Hazardous (>.1%) :

(No Product Ingredients Listed)

EPCRA 313 Toxic Chemicals (>.1%) :

007440-47-3	Chromium
000108-10-1	Methylisobutyl ketone
000107-98-2	Propylene glycol monomethyl ether
007440-66-6	Zinc

Mass RTK Substances (>1%) :

000067-64-1	Acetone
007440-47-3	Chromium
000115-10-6	Dimethyl ether
000142-82-5	Heptane (n-)
000110-19-0	Isobutyl acetate
000078-83-1	Isobutyl alcohol
000108-10-1	Methylisobutyl ketone
000074-98-6	Propane
000107-98-2	Propylene glycol monomethyl ether
007440-66-6	Zinc

Mass Extraordinarily Haz Sub (>.01%) :

007440-47-3	Chromium

Penn RTK Substances (>1%) :

000067-64-1	Acetone
007440-47-3	Chromium
000115-10-6	Dimethyl ether
000142-82-5	Heptane (n-)
000110-19-0	Isobutyl acetate
000078-83-1	Isobutyl alcohol
000108-10-1	Methylisobutyl ketone
000074-98-6	Propane
000107-98-2	Propylene glycol monomethyl ether
007440-66-6	Zinc

Penn Special Hazardous Substances (>.01%) :

007440-47-3	Chromium

Rhode Island Hazardous Substances (>.1%) :

000067-64-1	Acetone
007440-47-3	Chromium
000115-10-6	Dimethyl ether
000142-82-5	Heptane (n-)
000110-19-0	Isobutyl acetate
000078-83-1	Isobutyl alcohol
000108-10-1	Methylisobutyl ketone
000074-98-6	Propane
000107-98-2	Propylene glycol monomethyl ether
007440-66-6	Zinc

RCRA Status (>.01%) :

007440-47-3	Chromium : 5.0 mg/L regulatory level; waste number D007

N.J. RTK Substances (>1%) :

000067-64-1	Acetone
007440-47-3	Chromium
000115-10-6	Dimethyl ether
000142-82-5	Heptane (n-)
000110-19-0	Isobutyl acetate
000078-83-1	Isobutyl alcohol
000108-10-1	Methylisobutyl ketone
000074-98-6	Propane
000107-98-2	Propylene glycol monomethyl ether
007440-66-6	Zinc

N.J. Special Hazardous Substances (>.01%) :

000067-64-1	Acetone
007440-47-3	Chromium
000115-10-6	Dimethyl ether
000142-82-5	Heptane (n-)
000110-19-0	Isobutyl acetate
000078-83-1	Isobutyl alcohol
000108-10-1	Methylisobutyl ketone
000074-98-6	Propane
000107-98-2	Propylene glycol monomethyl ether

N.J. Env. Hazardous Substances (>.1%) :

007440-47-3	Chromium
000115-10-6	Dimethyl ether
000108-10-1	Methylisobutyl ketone
000074-98-6	Propane
000107-98-2	Propylene glycol monomethyl ether
007440-66-6	Zinc

Proposition 65 - Carcinogens (>0%):

(No Product Ingredients Listed)

Proposition 65 - Female Repro Toxins (>0%):

(No Product Ingredients Listed)

Proposition 65 - Male Repro Toxins (>0%):
(No Product Ingredients Listed)
Proposition 65 - Developmental Toxins (>0%):
(No Product Ingredients Listed)

16. OTHER INFORMATION

The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, expressed or implied, is made with respect to the information contained herein. We accept no responsibility and disclaim all liability for any harmful effects which may be caused by exposure to our products. Customers/users of this product must comply with all applicable health and safety laws, regulations, and orders.

End Of Document

DeMarco, Robert

From: Norman, Pamela
Sent: Wednesday, July 11, 2012 2:49 PM
To: DeMarco, Robert
Subject: RE: FW: Coast Guard Hazardous waste records

Mr. Demarco,

Your inquiry was forwarded to me by NARA. Other than those environmental records created by the National Pollution Fund Center, USCG hasn't scheduled environmental records. The current policy is to retain them indefinitely. There should be guidance/direction in the COMDT Instructions/Manuals 16475 series; we are working with the program managers for those directives, on developing and published specific records guidance.

I suggest you call the responsible office here at USCG headquarters for additional clarification.

v/r

Pamela J. Norman
COMMANDANT (CG-61)
US COAST GUARD Records Officer
ph. (202) 475-3534

-----Original Message-----
From: Erin.Cayce@nara.gov
Sent: Thursday, June 28, 2012 11:35 AM
To: Norman, Pamela
Subject: Re: FW: Coast Guard Schedule

Good morning Pamela,

I also wanted to let you know that I received a call from a Bob DeMarco who is at a CG facility in Baltimore, MD, looking for records of trash manifests, waste disposal manifests, etc. He says he has received a 104e letter from the EPA alerting him that there's a new issue with a hazardous waste dump, and he's looking to see how such things are handled across your agency. I thought I ought to send you his question rather than jump into the middle of that before you have heard of it. His contact is 410-636-7070.

Thanks so much, and happy Fourth,
Erin

Erin M. Cayce
Archives Specialist
Archives II
8601 Adelphi Road
College Park, MD 20740-6001
301-837-1907

DeMarco, Robert

From: DeMarco, Robert
Sent: Thursday, June 14, 2012 3:15 PM
To: Davis, Jerry
Cc: Barresi, John CDR; Weidel, Ruth Ann
Subject: EPA 104e Letter
Attachments: 104e Letter 4-23-12.PDF

Mr. Davis,

This is written to follow up on our conversation of this morning. Please see attached 104e letter from the US Environmental Protection Agency. EPA requires detailed information from the CG Yard on past waste disposal practices for the period 1960 to 1990. As you may expect, many of the employees having knowledge of our waste practices during that time period are now retired. By interviewing current long time employees at the Yard we have created a list of retired individuals who likely have some knowledge of the requested information. I was going to provide the addresses for these retired employees that we have on file upon their retirement. Ms. Weidel, the CG Attorney for this effort has requested their current addresses since undoubtedly many have moved since their retirement.

The names and DOB for the retired employees is below. This is to request you forward our request to the appropriate office or person.

Walter C. Dorsch Jr.
[redacted]
Retired: Date unknown

Stanley P. Patro Jr.
[redacted]
Retired: Date unknown

William Brown
[redacted]
Retired: November 2011

Everett C. Warble Jr.
[redacted]
Retired: June 2005

Joseph E. Botts
[redacted]
Retired: Date unknown.

Ursula Yeo
[redacted]
Retired: Date unknown

Richard W. Doherty
Retired: Date unknown

Frank Garriques
Retired: Date unknown

William Brown

Retired: November 2011

Thank you, I am available to answer any questions.

Respectfully,

Robert A. DeMarco
Yard Environmental Engineer
Mail Stop #10, Building #4
2401 Hawkins Point Road
Baltimore, MD 21226

Desk (410) 636-7070
Cell (410) 336-8637

DeMarco, Robert

From: DeMarco, Robert
Sent: Wednesday, June 06, 2012 6:06 AM
To: Borman, Denise
Subject: RE: Contact Information for Former Employees

Thanks Denise.

-----Original Message-----
From: Borman, Denise
Sent: Tuesday, June 05, 2012 3:41 PM
To: DeMarco, Robert
Subject: RE: Contact Information for Former Employees

Found Doherty-

Richard W. Doherty
[redacted]

And these addresses are not current, these are last known when employed here.

-----Original Message-----
From: DeMarco, Robert
Sent: Wednesday, May 30, 2012 3:08 PM
To: Borman, Denise
Subject: RE: Contact Information for Former Employees

Denise,

No rush on this. It is William Brown who retired in 2011 from the Electric Shop. Ordinarily I would ask Paloma about military but she is out. Do you know a contact person for military?

Thanks, Bob

-----Original Message-----
From: Borman, Denise
Sent: Wednesday, May 30, 2012 3:05 PM
To: DeMarco, Robert
Subject: RE: Contact Information for Former Employees

Bob FYI - I would only have last known address (when they worked here), not a current address.
Ursula was a Yard employee, I remember her well.
I would not have any military addresses, therefore I would not have an address (former or current) for Capt Payne. Maybe Military Personnel could help you with that one?

Do you have any additional information on William Brown. The Yard had a William Brown who retired in 2011 from the Electric Shop, the ELC had a William Brown who left in 2010 from the Warehouse, could it be one of them or someone completely different?

I'll get this info for the others asap.

-----Original Message-----
From: DeMarco, Robert
Sent: Wednesday, May 30, 2012 2:40 PM
To: Borman, Denise
Cc: Barresi, John CDR
Subject: Contact Information for Former Employees

Denise,

In order to fulfill a request by the Environmental Protection Agency (EPA) we are requesting contact information for the following list of former CG employees. EPA has requested current addresses and dates of birth for former employees knowledgeable of past Yard waste management practices. It is my understanding that Ursula Yeo was a ELC employee, the rest were Yard employees.

Everett Warble
Ursula Yeo
Joseph E. Botts
CAPT J. M. Payne
William Brown

Thanks, Bob

DeMarco, Robert

From: DeMarco, Robert
Sent: Wednesday, August 22, 2012 1:35 PM
To: DeMarco, Robert
Subject: FW: EPA Seeking Information From Retired Coast Guard Civilians

From: Misiorek, Walter
Sent: Wednesday, July 18, 2012 8:18 AM
To: DeLuca, Laura
Cc: Davis, Jerry; Weidel, Ruth Ann
Subject: EPA Seeking Information From Retired Coast Guard Civilians

Good morning Laura. As we discussed last week, we have been ordered to comply with a request from the EPA. See below...

The U.S. Environmental Protection Agency (EPA) is seeking information concerning a release, or the threat of a release, of hazardous substances into the environment at the Sauer Dump Site in Baltimore County, MD from 1960 – 1990. Pursuant to the authority of Section 104(e) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended (CERCLA), 42 U.S.C. Section 9604(e), the U.S. Environmental Protection Agency (EPA) has required the U.S. Coast Guard to furnish all information and documentation in our possession, custody or control, related to our use of the Sauer Dump Site from 1960 – 1990. Many of our employees having knowledge of our waste practices during that time period are now retired. We have come up with a list of retired civilian employees that may have information to share. As you know, federal agencies do not maintain records on retired civilians. Would you please forward our request to the appropriate official at the Office of Personnel Management, so that we can comply with the EPA request at your earliest convenience?

We would like the current addresses for the following retirees:

Walter C. Dorsch Jr.
[redacted]

Stanley P. Patro Jr.
[redacted]

William Brown
[redacted], retired November 2011

Everett C. Warble Jr.
[redacted], retired June 2005

Joseph E. Botts
[redacted]

Ursula Yeo
[redacted]

Richard Doherty
DOB unknown

Frank Garriques
DOB unknown

Thank you in advance for your help.

V/r

Walt Misiorek
Chief, Retirement and Benefits Service Center U.S. Coast Guard Office of Civilian Human Resources
CG-1213 2100 2nd St., SW CG-1213, Room 8-0824 Washington, DC 20593-7801

Office:202-475-5325, Fax:202-475-5924

http://www.uscg.mil/civilianhr/

How’s my service? Let us know at: http://www.uscg.mil/civilianhr/survey

DeMarco, Robert

From: Fennell, Sean PERS4
Sent: Tuesday, July 24, 2012 2:22 PM
To: DeMarco, Robert
Cc: Barresi, John CDR
Subject: RE: EPA Information Request

Good Afternoon,

We have exhausted all avenues of research. They are not anywhere in DEERS, nor in active records at PPC Topeka. This tells me that they are no longer among the living. Not positive, but seems likely. Sorry.

v/r/ CWO FEnnell

-----Original Message-----
From: DeMarco, Robert
Sent: Thursday, July 05, 2012 7:51 AM
To: Fennell, Sean PERS4
Cc: Barresi, John CDR
Subject: EPA Information Request

Mr. Fennell,

The CG Yard has been named as a Potential Responsible Party at a Superfund Site in Baltimore County, Maryland. In order to fulfill an information request by the Environmental Protection Agency (EPA) we are requesting contact information for the following two former CG officers. EPA has requested current addresses (or past addresses if current addresses are not known) and dates of birth for former officers believed to be knowledgeable of past Yard waste management practices. We do not know exactly when they were at the Yard but believe it was in the mid to late 1980s.

CAPT J.M. Payne
Designated Health and Safety Official, Manager, Industrial Ops

CAPT R.A. Walsh, Safety and Health Official

Please advise if you have any questions, thanks, Bob

Robert A. DeMarco
Yard Environmental Engineer
Mail Stop #10, Building #4
2401 Hawkins Point Road
Baltimore, MD 21226

Desk (410) 636-7070
Cell (410) 336-8637